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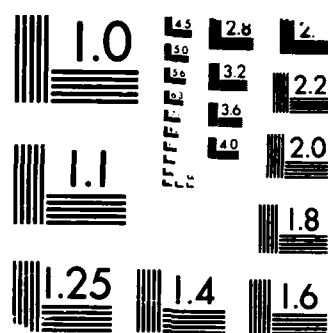
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**DEEP ATTACK: THE SOVIET
CONDUCT OF OPERATIONAL MANEUVER**

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U.S. Army Combined Arms Center
Fort Leavenworth, Kansas**

April 1987

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Y. Novikov and F. Sverdlov discussed the
concept of operational maneuver. It is

"Operational maneuver is undertaken to achieve success in an operation in keeping with the concept and under the guidance of the commander of an operational unit. Its scope, as regards forces involved, and particularly area and time (except for maneuver with nuclear power) transcends the bounds of the battlefield. Operational maneuver is aimed at changing the situation in the course of an operation to facilitate the fulfillment of intermediate assignments or even bring the operation to a successful conclusion. It may take the form of maneuver with nuclear strikes delivered by operational or tactical missiles or the army air force, [or] a maneuver by operational groups from one sector to another to exploit success or outflank an enemy group on the defensive, etc." (to be continued)

Y. Novikov, F. Sverdlov, Maneuver in Modern Land Warfare 1967



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Preface

The Soviets have long believed that the effective conduct of operational maneuver is essential for a military force to achieve success at the operational level of war. In the 1930's the Soviets combined the fruits of modern technology (tank and airplane) with theoretical concepts derived from their Civil War experience and that of World War I to formulate first the concept of deep battle and later that of deep operations. These concepts envisioned the use of mechanized forces to produce both rapid tactical penetrations and deep operational exploitation. These concepts and the forces to carry them out suffered under the crush blow of Stalin's military purges of the late 1930's. Subsequent Soviet military embarrassments in the Finnish War (1939-40) and during the first 6 months of the Russian-German War demonstrated the harm done by the purges and underscored the major problems Soviet military leaders were to face in reconstructing their mobile forces and reviving concepts for their use.

This reconstruction of forces and revival of concepts occurred at high cost in lives during the heat of war. Nevertheless, by 1943 Soviet mobile concepts and forces had emerged in complete form thus realizing the hitherto unfulfilled promises of 1936. Soviet operational maneuver matured from 1943 to 1945 leaving a residue of theory and experience for generations of postwar military leaders.

Those theories and experiences have dominated Soviet military thought and practice in the postwar years despite a brief hiatus during the 1960's when Soviet theorists deemphasized operational maneuver in the belief that nuclear weapons had significantly altered the nature of war. Current Soviet military theorists and practitioners have returned with a vengeance to the long Soviet

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INTRODUCTION

This paper addresses a subject which has received a tremendous amount of attention in the past two years but about which many questions are still being asked - the topic of operational maneuver. My focus will be on the Soviet experience with operational maneuver. For the Soviets, the subject is by no means new. In fact, operational maneuver has long been the central focus of Soviet theoreticians, planners, and commanders as they have prepared for and conducted war. Specifically, I will concentrate on concrete experiences the Soviets have had with operational maneuver, for it is those experiences that the Soviets are drawing upon extensively as they contemplate the conduct of operational maneuver today.

Let me begin by recalling the events of a single day in the summer of 1943. The setting in which the action took place was a 40-kilometer sector of front defended by the German LII Army Corps northwest of the Russian city of Belgorod (Map 1). It contained the front line positions of three German infantry divisions, the 255th, 332d and 167th. To their rear were the positions of two German panzer divisions, the 19th and the 6th Panzer Divisions.

Let me recount the action that took place on that day. At 0500 hours 3 August the Soviets passed the codeword "Urugan" (Hurricane) to their forces assembled in attack positions opposite German defenses north of the city of Belgorod. Instantly over 4000 guns opened fire on forward German defensive positions pulverizing the lightly defended strongpoints.

At 0505 the firing abruptly stopped, and German infantry filtered forward to reoccupy the forward defenses and to meet the expected Soviet infantry assault. Thirty minutes later, at 0535, the thunderous bombardment resumed, raining fire on the surprised German defenders. Simultaneously waves of Soviet aircraft pounded German defensive positions deeper in the rear area. After two hours and ten minutes of fire, concentrated volleys of Katyusha rocket fire ripped German positions for five minutes completing the devastation of German defenses.

At 0755 hours, as the sounds of the last exploding rocket faded, the Soviet fire shifted into the depths of the German defenses. Simultaneously Soviet assault parties supported by battalion and regimental guns and infantry support tanks advanced through the smoke and dust into and through the remnants of the first German defensive line.

At 1140 hours, as Soviet infantry of 5th Guards Army cleared German defenders from their second defensive lines 6 kilometers deep in the main German defensive belt, the 5th Guards Army Commander General Zhadov informed his front commander General Vatutin of his army's progress. General Vatutin immediately signalled his two tank armies to begin their advance.

At 1150 hours, at a depth of 6 kilometers into the German defenses, the forward detachments of General Katukov's 1st Tank Army and General Rotnistrov's 5th Guards Tank Army arrayed in battalion and company column lunged forward along preplanned routes through the advancing Soviet infantry. The momentum of the assault carried the four tank brigades comprising the forward detachments through the third and last German defensive positions and into the operational open. Behind the four brigades marched their parent corps advancing in brigade column along a front of 6 kilometers.

By 1500 hours the armor of four Soviet tank corps were in motion through the German defenses and were marching southwestward into the German rear area.

Behind them the mechanized corps of the two armies followed, each of which completed its passage of lines by 2100 hours.

By 2200 hours 3 August, the bulk of two Soviet tank armies, over 1000 tanks strong, had broken cleanly through the German tactical defenses leaving three destroyed German divisions in their wake and had begun an operational exploitation. The first modern Soviet offensive operation had begun, an operation during which, for the first time, Soviet front and army commanders had at their disposal forces capable of performing successful, sustained operational maneuver - moreover, maneuver forces whose sole operational mission was to perform that task. Where did this capability come from; and, more importantly, where would it go in the future?

The Eve of Mechanization

Military theorists, planners, and commanders in the twentieth century have faced many dilemmas produced by the growing complexity of war. The emergence of mass armies, the rapid development of technology, and the application of that technology to virtually every aspect of war fighting have posed problems and have provided new opportunities to those who have planned and conducted war. In search of victory, these planners and operators have sought to solve those problems and exploit those opportunities. Historical experiences have provided evidence of their mixed success.

Among the foremost problems facing military men of the twentieth century was the problem of mastering technology sufficiently to maintain the capability of maneuvering on the expanded battlefield. Most military men realized that maneuver was the key to victory and a means for avoiding the catastrophic losses that direct confrontation with modern weaponry would produce. The experiences of the Russians and Japanese in 1904-1905 and the major powers from 1914-1918 demonstrated that armies mastered the technology of firepower more quickly than they mastered the technology of movement. The resulting dysfunction produced the staggering losses that made the waging of war suicidal for the political leadership of many nations to say nothing of the disruptive effects of these wars on economies and societies.

In the years after World War I it was natural for nations to look for opportunities to harness the new technology to the maintenance of their national interests. These interests, in part, conditioned how nations responded to all technological innovations. Simplistic explanations have credited the Soviets and Germans with undertaking imaginative responses to the technological challenges while criticizing the seemingly passive response of Western nations

to the same stimula. In reality, all nations appreciated the impact of technology. However, their responses were different. The nations, like France, Great Britain and the United States, whose interests lay in maintaining peace and the status quo saw the exploitation of technology as the means for creating defensive concepts which, by virtue of their strength, made prospective offensive action folly. This approach, best symbolized by France's Maginot scheme, of course, had its political corollaries as well.

Other nations, restless within the status quo, viewed technological innovations from another perspective. To those nations, most notably Germany and the Soviet Union, the full exploitation of technology was a potential means for escaping from the shackles of the crushing weight of firepower, for producing new offensive opportunities on the battlefield, and for realizing potential changes in the political status quo. The early cooperation between Germany and the Soviet Union in the 1920s in areas such as tank and aircraft development were indicative of this trend.

Those who sought an escape from the stalemate of positional warfare and crushing firepower did so by focusing on the subject of maneuver. Specifically, they sought to use firepower in concert with new concepts of mobility which also resulted from technological changes. They believed that mobility technology might become the companion of firepower technology and that a blend of the two might make maneuver on the battlefield again possible.

The Soviet Union, victimized by both World War I and her Civil War and energized by new ideological motives, was particularly receptive to the idea of experimentation in the realm of maneuver warfare. Moreover, her weak technological base and her Civil War experiences further conditioned that experimentation. Lacking a strong economy, the Soviets realized that rapid economic progress was essential for the nation to compete with the West (and perhaps also

ideologically survive). Thus, much of the Soviet industrial development program from the outset was focused on developing the capability for conducting successful maneuver war. In addition, the Russian Civil War, during which relatively small forces had waged war over vast areas, had permitted the conduct of maneuver and had produced a generation of officers intellectually attuned to the conduct of maneuver war.

In the 1920s the Soviet officer corps defined the problem and began articulating solutions in concert with evolving technology. Simply stated, these theorists concluded that strategic success in war required more than just an accumulation of tactical successes. They concluded that operational success was a prerequisite for strategic success, and they simultaneously defined the parameters of the operational level of war.

The definitions which emerged for the strategic, operational, and tactical levels of war became more precise; and those definitions, when fully refined, clearly highlighted the problems of World War I operations and the conditions necessary to escape those problems in the future. The Soviet theorist Svechin wrote:

We call the operation that act of war, during which struggling forces without interruption are directed into a distinct region of the theater of military operations to achieve distinct intermediate aims. The operation represents an aggregate of very diverse actions: the compilation of operational plans; material preparations; concentration of forces in jumping off positions; the erection of defensive structures; completion of marches; the conduct of battle by either immediate envelopment or by a preliminary penetration to encircle and destroy enemy units, to force back other forces, and to gain or hold for us designated boundaries or geographical regions.

If strategy dictated the aims of operational art, then operational art similarly affected tactics. Svechin declared that:

The material of operational art is tactics and administration: success in the development of an operation depends both on the successful resolution by forces of distinct tactical questions and on the provision to those forces of material supplies.... Operational art, arising from the aim of the operation, generates a series of tactical missions and establishes a series of tasks for the activity of rear area organs.

Thus, in this emerging Soviet view all branches of military art were interrelated. In Svechin's words, "tactics make the steps from which operational leaps are assembled; strategy points out the path." Svechin's work and the theoretical work of others in the 1920s created the realm of operational art as a new category of military theory.

Along with this redefinition of the traditional realm of war grew a realization that successful maneuver at the tactical and operational level could liberate warfare from the fetters experienced in World War I and produce strategic success.

Soviet Mechanization

It was the generation of Marshal Tukhachevsky which further developed these new definitions. In the 1930's they first formulated the concept of deep battle (GLUBOKII BOI) and later that of deep operations (GLUBOKAYA OPERATSIYA). The Soviets derived these concepts in large part from Soviet Civil War experiences against a backdrop of Russian World War I experiences and, in part, from an active interchange of ideas with foreign military theorists.

The Soviets built an improving military force in the mid-thirties which was designed to conduct mobile war and refined a military doctrine which emphasized extensive maneuver by mechanized forces at the tactical and operational level.* Hence, by 1936 the Soviets possessed four large mechanized corps of about 600 tanks each; an array of mechanized and tank brigades, regiments, and battalions designed for employment at the tactical and operational level; and a field regulation (that of 1936) which provided a blueprint for the integration of mechanized forces into operations at every level of command.

However, in the late 1930s Soviet mobile concepts suffered severe setbacks. The purge of Tukhachevsky and the majority of his compatriots inevitably brought his concepts into disrepute. Simultaneously, the negative Soviet experiences with large tank forces in Spain (1937-38) and in eastern Poland (September 1939) led the Soviets by November 1939 to abolish the large mechanized corps and replace them with tank brigades - also large tank units but ones which lacked infantry - and smaller motorized divisions. In fact this reduction of Soviet armored forces was prompted in part by a realization that technological realities would have made it difficult for even Tukhachevsky to control so large and complex a force.

Less than one year after the Soviet decision to truncate severely her mechanized forces German armies swept into France spearheaded by German panzer

*As a corollary the Soviets also built an airborne force.

corps and divisions. As France fell victim to blitzkrieg the Soviets suddenly realized that Germany had stolen the march on the Soviets regarding mechanization. The Soviets responded with a crash program to reconstruct a mechanized force, although the catchword "deep operations" remained buried with its purged creators.

In late 1940 the Soviets mandated creation of almost thirty large mechanized corps consisting of tank divisions and mechanized divisions. Shortly thereafter this force was supplemented by new large airborne corps and antitank brigades. These new mobile units, whose formation would be complete by 1942, added much to the already large Soviet rifle, artillery, and air forces.

Hence, the Red Army force structure of 1941 was an imposing one, at least on paper, and was a force the Soviets believed was capable of conducting operational maneuver. But it was also a force plagued by poor leadership and major equipment problems.

The Soviet force structure of June 1941, while very large and elaborate, was also very cumbersome (figure 1). The Red Army consisted of separate rifle armies, each of which theoretically numbered in excess of one hundred thousand men. The armies were subdivided into three or four large rifle corps; and the corps, in their turn, consisted of rifle divisions, each with over 14,000 men. The heart of the Soviet mobile force structure in June 1941 was the 29 mechanized corps, only about half of which had their full complement of tanks. Unfortunately, most of these tanks were older models rather than the newer T-34 and KV (Klementi Voroshilov) tanks. The mechanized corps were further subdivided into two tank divisions and one mechanized division. The Soviets also had in their force structure large cavalry corps consisting of cavalry divisions and airborne corps composed of airborne brigades. This was the large Soviet force structure in existence when the Germans launched their lightning campaign of June 1941 into the western Soviet Union.

RED ARMY FORCE STRUCTURE

JUNE 1941

0 RIFLE ARMIES

0 RIFLE CORPS

0 RIFLE DIVISIONS (14,500-16)

0 MECHANIZED CORPS (36,000-1,031)

0 TANK DIVISIONS (11,000-375)

0 MECHANIZED DIVISION (11,600-275)

0 CAVALRY CORPS

0 CAVALRY DIVISIONS (9,000-64)

0 AIRBORNE CORPS (10,400-50)

0 AIRBORNE BRIGADES (3,000)

DECEMBER 1941

0 RIFLE ARMIES

0 RIFLE DIVISIONS (11,600)

0 RIFLE BRIGADES (4,400)

0 TANK BRIGADES (1,470-46)

0 CAVALRY CORPS

0 CAVALRY DIVISIONS (6,000)

0 LIGHT CAVALRY DIVISIONS (3,400)

0 AIRBORNE CORPS (12,000)

0 AIRBORNE BRIGADES (3,300)

The Initial Shock of War

The German invasion of June 1941, a surprise although it should not have been, caught the Soviet armored forces maldeployed, poorly led, only partially trained, and poorly equipped. The German blitzkrieg, conducted by four panzer groups advancing along three separate axes, seized the initiative and denied Soviet forces the opportunity to conduct effective counter strokes.

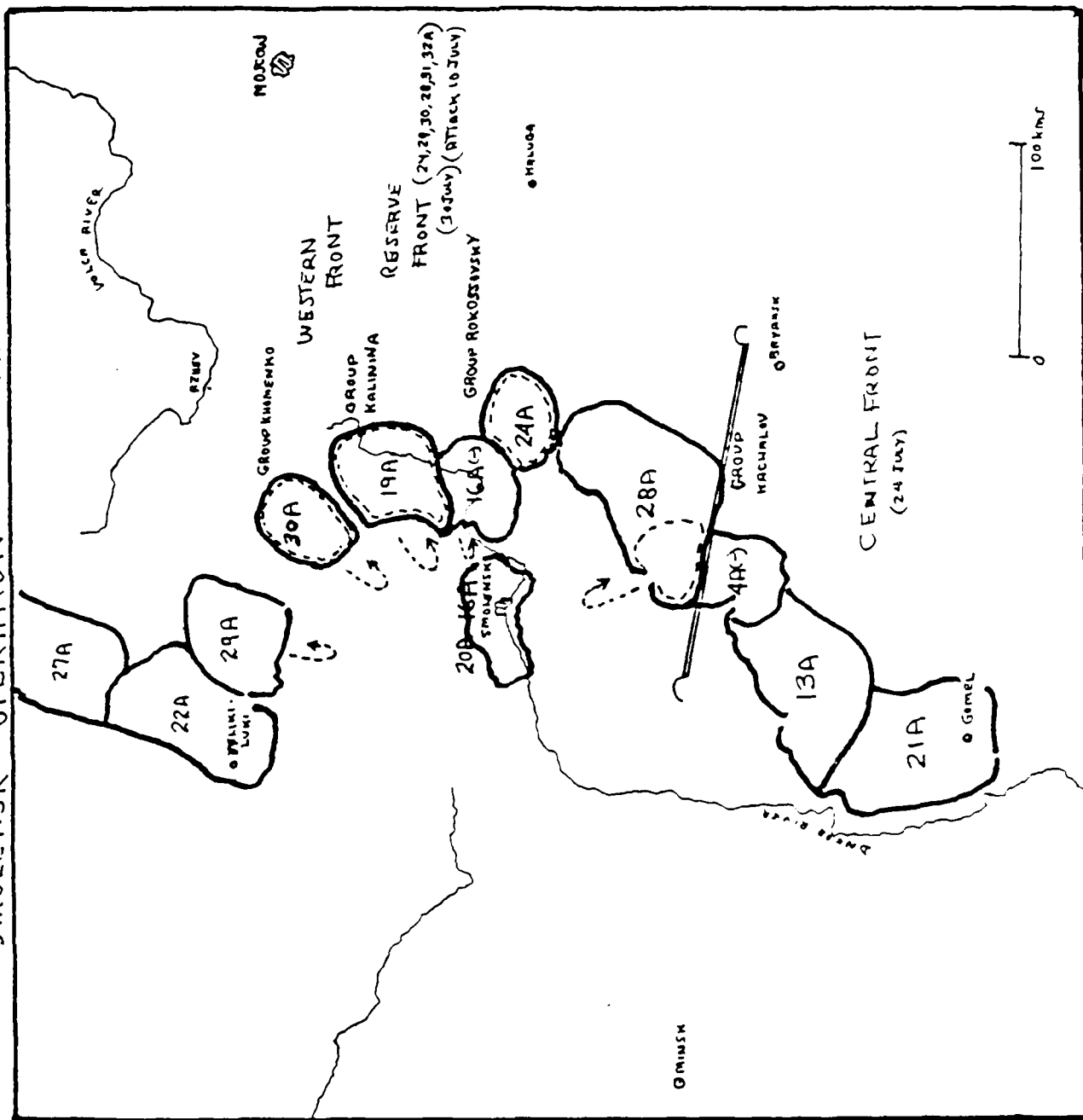
Let us now turn to how that Soviet force performed in war as viewed through the prism of selected operations. My focus will be on the Soviet capability to conduct operational maneuver, hence the maps will show only how the Soviets organized their forces for combat, what forces the Soviets used to conduct operational maneuver, and the degree of success those forces achieved.

The German attack which occurred on 22 June 1941 was spearheaded by four panzer groups which quickly cut through Soviet border defenses and penetrated deep into the western Soviet Union. The Soviets reacted to the German attack by attempting to counter-attack with their large but scattered mechanized forces (Map 2). The Soviet mechanized corps' counterattacks were poorly coordinated and generally led to operational disasters in each case where they were conducted. Only in the extreme south, in the Kiev Military District, did the semi-coordinated counterattacks by four Soviet mechanized corps affect the progress of the German advance. Throughout the summer of 1941, when the momentum of the German advance kept Soviet forces off balance, the Soviets attempted few offensive operations. The only major Soviet offensive occurred during July in the Smolensk region when the Soviets attempted to employ four armies of their Reserve Front in order to halt the German forward progress and relieve Soviet forces already encircled in the vicinity of Smolensk (Map 3).

BORDER BATTLES 22-29 JUN 1941



SOVIET OPERATIONAL FORMATION SMOLENSK OPERATION JULY 1941



The Smolensk operation clearly demonstrated the problems that Soviet commanders were confronted with in the summer of 1941 as they sought to conduct offensive operations. At Smolensk the Soviets suffered from a distinct lack of armor, air, and artillery support. The four army shock groups that the Soviets used in the counterattack role, each named for its commander, lacked large armored formations in their composition. Most armor found in each of the armies simply performed the function of infantry support. Moreover, coordination between armor and infantry was poor. Thus, the Soviet Smolensk counterattacks failed; and the Germans continued their offensive, first towards Kiev in the south, and later, in the autumn, towards Moscow.

The German offensive progressed throughout July and August and resulted in the destruction of much of the Soviet pre-war force structure. As a result of their unsuccessful combat operations, the Soviets determined that their units were in fact too large and complicated for their commanders to effectively command and control. In addition, Soviet commanders proved inept at coordinating the diverse forces and weapons under their command. Consequently, in August and September the Soviets began a truncation process in order to decrease the size of their units to a point where their commanders could more effectively control and employ them. By December 1941 this truncation process was complete (figure 2). In essence, the Soviets lightened their force structure at all levels of command. They dropped the rifle corps link from their rifle armies and decreased the size of their rifle armies to under one hundred thousand men. The new rifle armies were composed of rifle divisions and rifle brigades and had fewer supporting units. The rifle divisions themselves were considerably reduced in size compared with their pre-war counterparts, and the rifle brigades were nothing more than light divisions of about 4,500 men each.

RED ARMY FORCE STRUCTURE

JUNE 1941

0 RIFLE ARMIES

0 RIFLE CORPS

0 RIFLE DIVISIONS (14,500-16)

0 MECHANIZED CORPS (36,000-1,031)

0 TANK DIVISIONS (11,000-375)

0 MECHANIZED DIVISION (11,600-275)

0 CAVALRY CORPS

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0 AIRBORNE CORPS (10,400-50)

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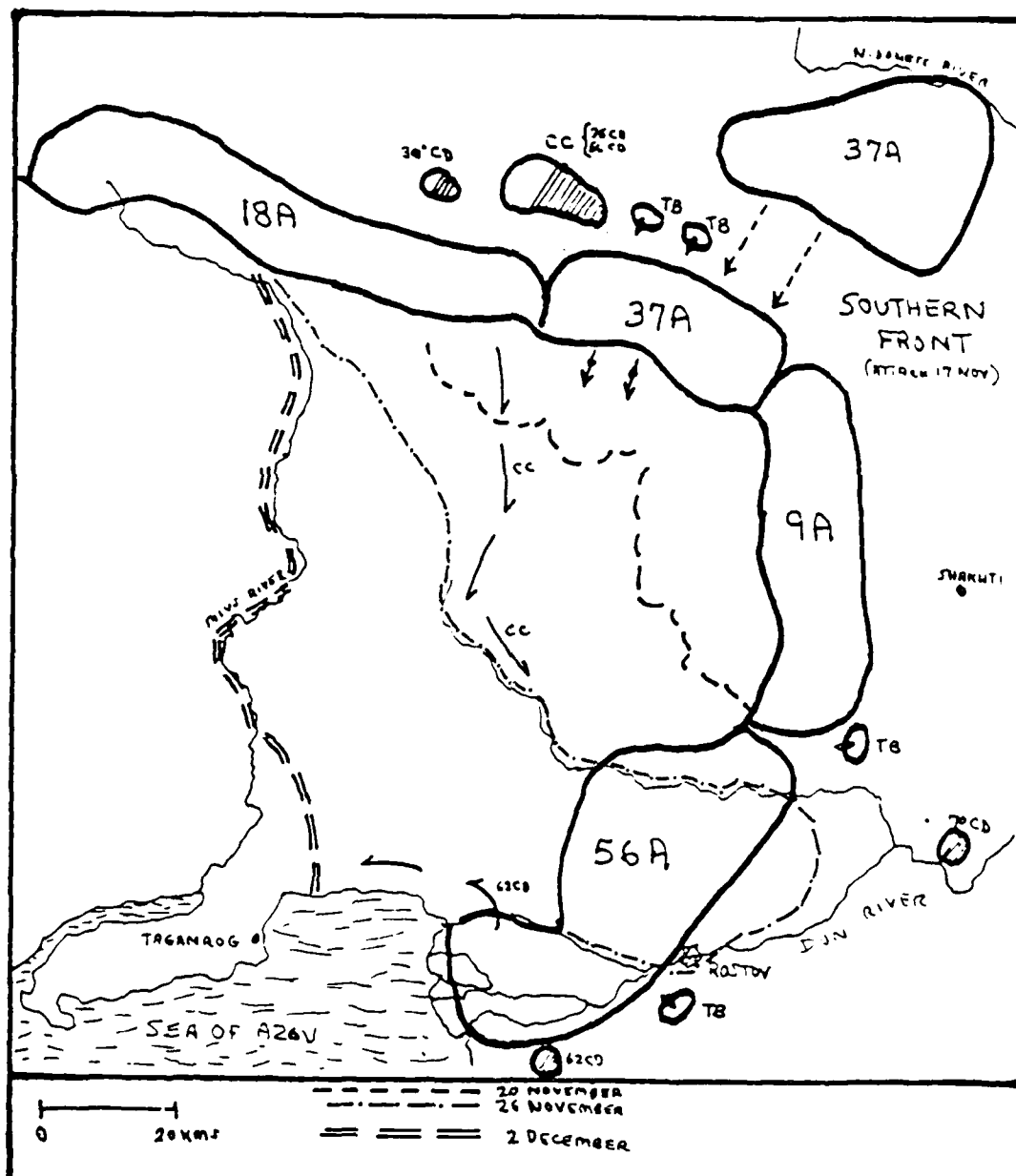
The Soviets disbanded that portion of their mechanized corps structure that the Germans had not already weakened or destroyed in combat. By December 1941, the largest armored formation existing in the Red Army force structure was the separate tank brigade. The new separate tank brigade was also shrunken and consisted of only 46 tanks. Most of these tank brigades had, in fact, between 20 and 30 tanks. The Soviets formed 68 of these brigades by the end of December 1941. Even the cavalry corps were subject to the truncation process. The Soviets formed over 80 light cavalry divisions by December 1941, each numbering roughly half of the strength of the older cavalry division.

Thus the Soviets in a period of six months significantly lightened their force structure. They stripped from that force structure much of its armor and artillery support and began concentrating those armor and artillery assets in new units under control of the High Command (STAVKA). Later the STAVKA would parcel those forces out to operating fronts and armies as dictated by specific operational conditions. The net effect of this severe Soviet truncation of their force structure was that it severely impeded the capability of the Soviets to carry out large scale sustained offensive operations and to conduct operational maneuver. A review of two Soviet offensive operations that took place in November and December of 1941 clearly demonstrated the scale of that problem.

The first operation took place near Rostov in southern Russia (Map 4). During the Rostov offensive operation, which occurred in late November and early December of 1941, the Soviets struck back at overextended German forces which had seized Rostov. The Soviets conducted the offensive by inserting into the first echelon of the attacking front a main attack force of a rifle army, supported by two tank brigades, a cavalry corps and a separate cavalry division. This force penetrated German defenses but thereafter it proved too weak to sustain deep operations. In this operation the Germans, because of their own

SOVIET OPERATIONAL FORMATION

— ROSTOV OPERATION NOV-DEC 1941



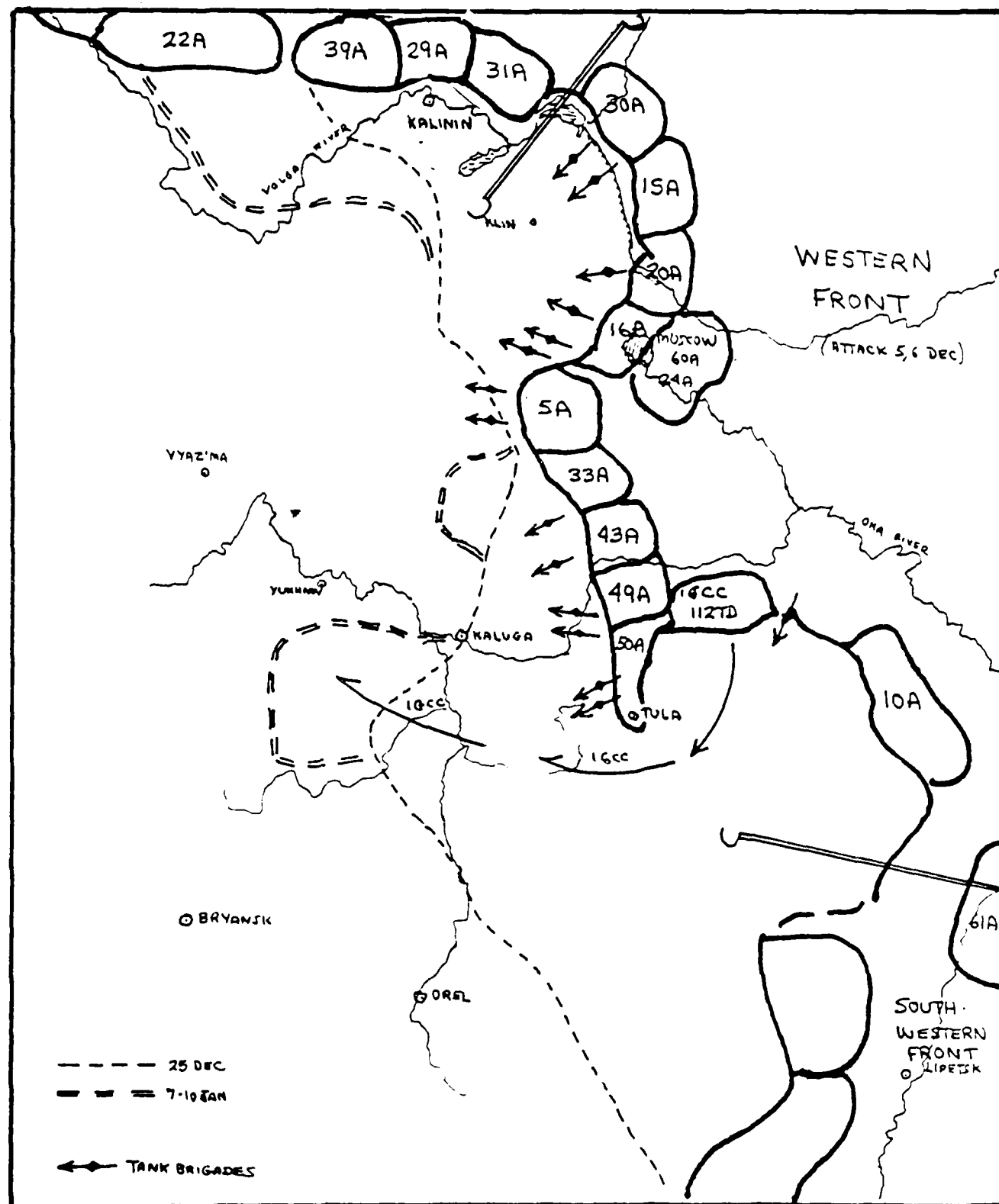
over-extension, were forced to withdraw to more defensive positions along the Mius River.

The Moscow operation of December 1941 and January 1942 also provided clear indicators of Soviet operational deficiencies during that period of the war. The Moscow counteroffensive began in December 1941 and ultimately encompassed several offensive impulses that lasted well into February of 1942 (Map 5). It was conducted by the armies of the Kalinin and Western Fronts against over-extended German forces around Moscow. In these operations the only units capable of conducting operational maneuver were three cavalry corps (the 11th, 1st Guards, and 2d Guards). These cavalry corps consisted of regular horse-cavalry divisions, light cavalry divisions; a few tank brigades; and, in some cases, rifle divisions as well. These forces of mixed composition and limited firepower were exceedingly difficult to control and coordinate in deep operations. Moreover, only a limited number of tank brigades were available to support army commanders at the outset of the Moscow operation. Generally from one to three tank brigades provided armored support for the advancing infantry of each rifle army. This was not enough armor to generate the sort of offensive momentum necessary to conduct sustained deep operations.

In the latter stages of the Moscow operation - in January and February 1942 - the Soviets conducted the Rzhev-Vyazma operation (Map 6). The offensive demonstrated that Soviet forces could penetrate German defenses. However, once those forces had advanced into the German rear, because of their light weaponry, those cavalry, ski, and airborne forces could not sustain their advance and fulfil their operational missions. Ultimately, by April 1942, the front west of Moscow was a patchwork quilt of overlapping Soviet and German units. The Soviets controlled the countryside, and German forces controlled many of the villages and roads.

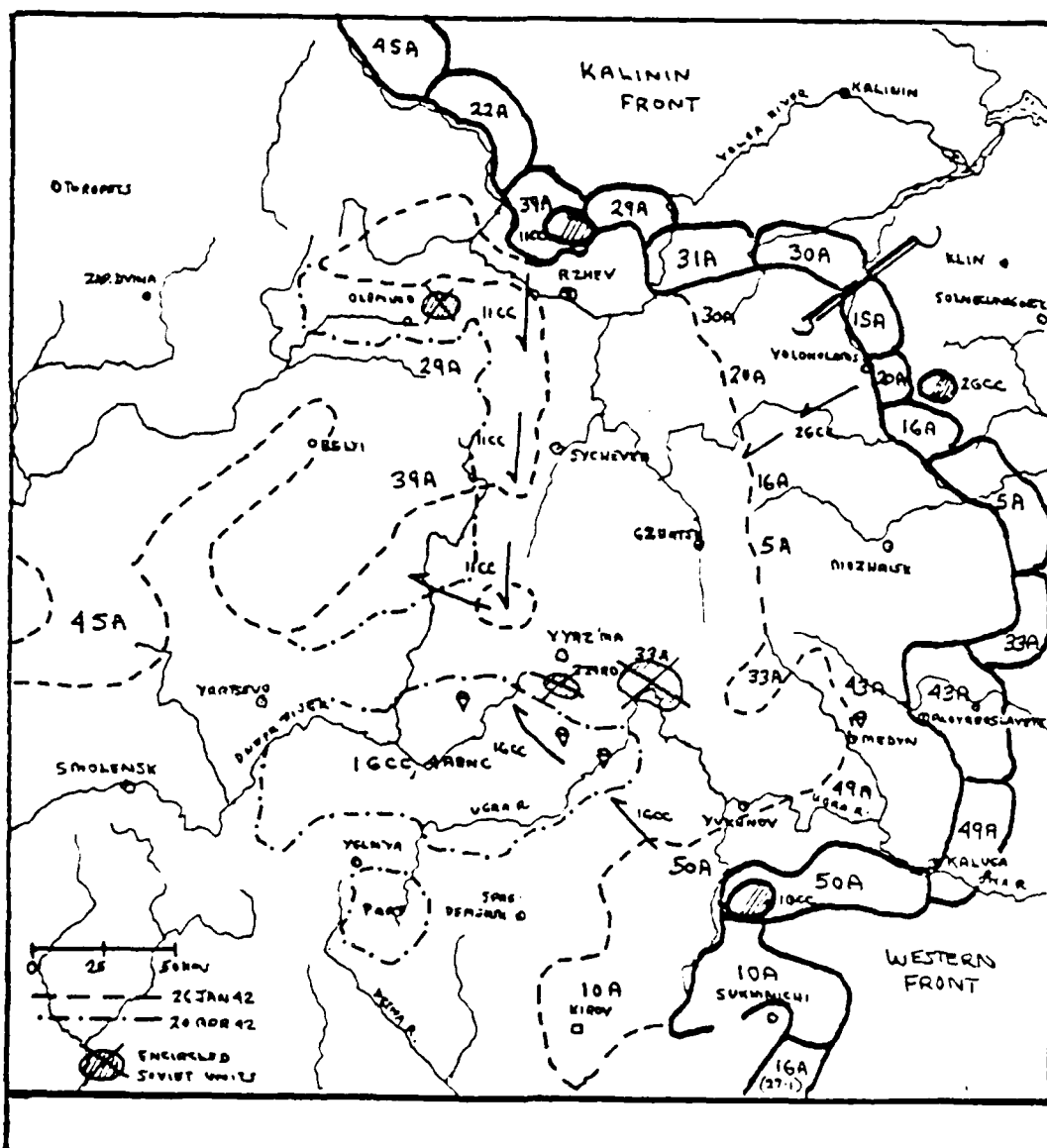
SOVIET OPERATION FORMATION

MOSCOW OPERATION DEC 1941 - JAN 1942



SOVIET OPERATIONAL FORMATION

RZHEV - VYAZ'MA OPERATION 8 JAN - 20 APR 1942



Rebuilding the Soviet Mechanized Force

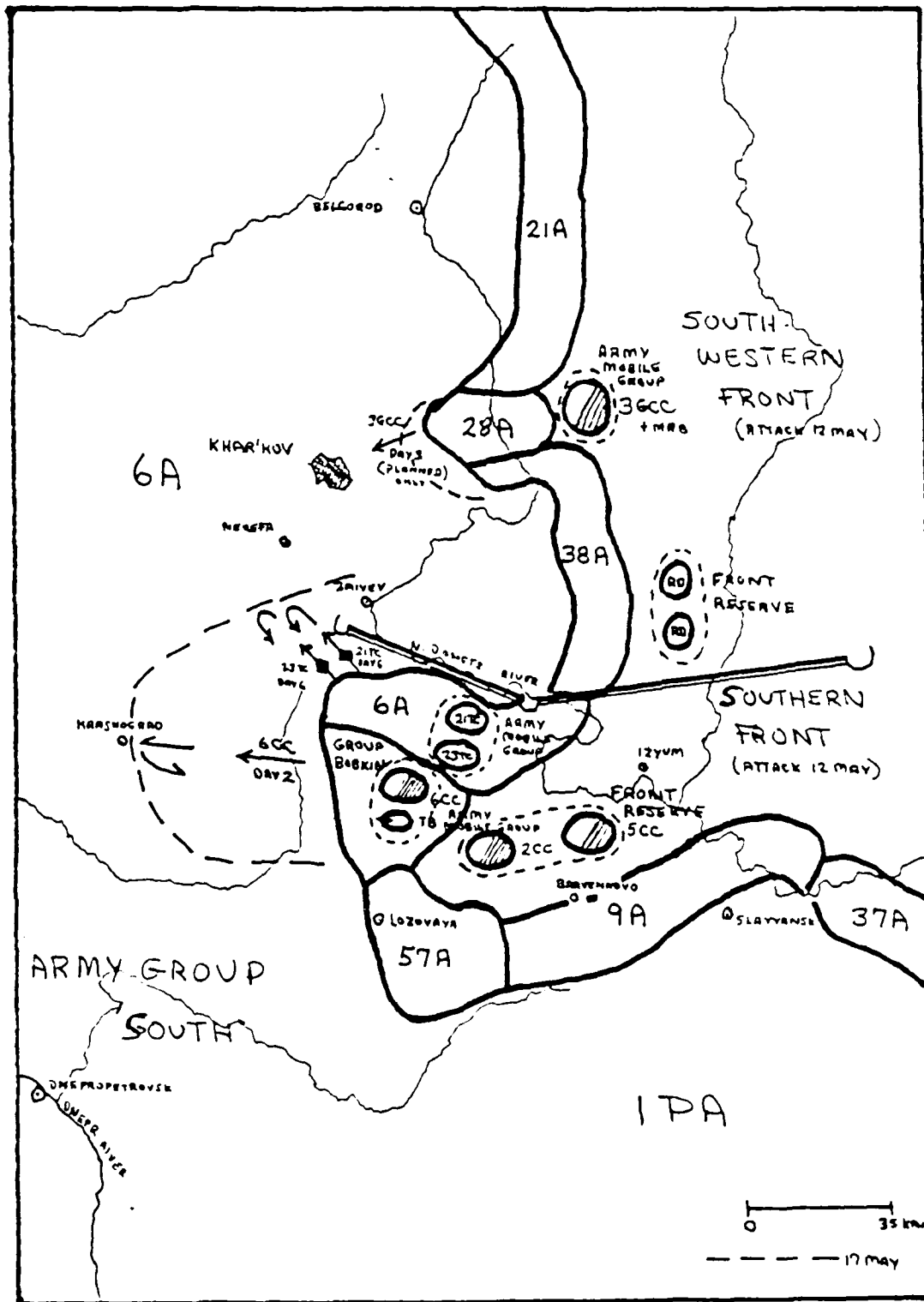
The Soviet High Command carefully examined their experiences in the summer and fall of 1941; and they concluded that their major problem in the conduct of offensive operations was the absence of large, mechanized, armored forces. After December 1941 the Soviets began the arduous process of rebuilding their mobile forces during wartime and testing them and refining them in combat. It was a process which transformed the Red Army force from a foot and hoof army of infantry and cavalry into a potent force dominated by its significant mobile armored formations. That often costly, but ultimately fruitful education, culminated organizationally and doctrinally in 1944 and 1945. Soviet progress throughout the war in rebuilding a force capable of conducting operational maneuver, equipped to fulfill that task, and led by commanders suited to perform such a function can best be gauged by a close look at specific Soviet operational experiences.

During the spring of 1942 the Soviets began forming larger armored formations so essential for them to conduct more successful offensive operations in the late spring and summer of 1942. In March 1942 the Soviets created the first of these units - the new tank corps. Initially these corps consisted of 100 tanks, but this rose to 168 tanks by the summer and ultimately, by the end of the year, to over 200 tanks each. The Soviets created 15 tank corps in 1942.

In May of 1942 the Soviets planned and conducted their first offensive operation using these new tank corps - the Khar'kov operation (Map 7). It was an operation designed to preempt German offensive action and place the initiative in Soviet hands. The Soviet High Command planned to attack north and south of Khar'kov and ultimately envelop and destroy German forces defending that important city. In the spearhead of the two Soviet enveloping forces were

SOVIET OPERATIONAL FORMATION

KHAR'KOV OPERATION MAY 1942



experienced cavalry corps and several new tank corps, two of which would exploit the attack south of Khar'kov.

During this operation the Soviets confronted for the first time some of the basic problems one must solve when orchestrating the use of deep exploiting forces - specifically such problems as when should those forces be committed to combat, how should they conduct the exploitation, and where should link-up be effected to produce the envelopment? In this operation the Soviets hesitated to commit their two tank corps, and ultimately they did not commit them to combat until the sixth day of battle. Because of the delay, the two tank corps went into action at the same time that the Germans began a major counterattack from the south. That counterattack caught the Soviets unprepared, caused a hasty recall of the tank corps to deal with the new threat and ultimately produced the encirclement of the entire Soviet attacking force south of Khar'kov. The Soviet failure at Khar'kov paved the way for the great German offensive which began in late spring and early summer and eventually culminated in the Battle of Stalingrad.

Despite their defeat at Khar'kov, the Soviets continued to improve their mechanized forces throughout the summer of 1942. They used their remaining new tank corps to try to parry the German advance in June and July of 1942; and in July of 1942 the Soviets created a new force entity, the tank army of mixed composition. The new Soviet tank army, five of which were created, consisted of a mixture of tank corps, rifle divisions, cavalry corps, and separate tank brigades. The major problem confronting the commanders of these new tank armies was that of holding such a motley, diverse group together and coordinating the actions of such diverse forces in offensive operations. The Soviets used these new tank armies against the advancing Germans in the Voronezh area (July) and again against the Germans on the distant and close approaches to Stalingrad. In

virtually every case, when employed, the tank armies proved to be less than fully effective against the better organized, better controlled, and better equipped German armored units.

In addition to creating tank armies, in September of 1942 the Soviets created new mechanized corps consisting of three mechanized brigades and one tank brigade or two separate tank regiments. The difference between the mechanized corps and the tank corps was that the former had a much heavier contingent of motorized infantry. Because of the Soviet shortage of motor vehicles and trucks, however, few of these corps ultimately were created. And those that were created, like the tank corps, lacked true armored infantrymen.

Thus by late 1942 a new Soviet force structure had emerged which demonstrated on the part of the Soviets a renewed faith in the ability of their commanders to control larger forces (figure 3). Hence, the Soviets expanded the size of rifle armies and again began adding the rifle corps level of command to the army structure. Some of the new, expanded rifle armies consisted of new rifle corps which contained the older rifle divisions and rifle brigades. In addition, the Soviet force structure by the end of 1942 included 5 full tank armies of mixed composition as well as 15 tank and 4 mechanized corps. Front commanders controlled the tank armies while the tank and mechanized corps were normally put at the disposal of army commanders.

RED ARMY FORCE STRUCTURE

JANUARY 1943

0 RIFLE ARMIES
 0 RIFLE CORPS (A FEW)
 0 RIFLE DIVISIONS (9,400)
 0 RIFLE BRIGADES (6,000)
 0 TANK ARMIES (MIXED COMPOSITION)
 0 TANK CORPS (7,800-168)
 0 MECHANIZED CORPS (13,600-175)
 0 CAVALRY CORPS
 0 CAVALRY DIVISIONS (4,700)
 0 AIRBORNE BRIGADES (3,300)

1944-1945

0 RIFLE ARMIES
 0 RIFLE CORPS
 0 RIFLE DIVISIONS (11,700)
 0 TANK ARMIES
 0 TANK CORPS (12,000-228)
 0 MECHANIZED CORPS (16,300-183)
 0 CAVALRY-MECHANIZED GROUPS
 0 TANK/MECH CORPS
 0 CAVALRY CORPS
 0 SEPARATE TANK/MECHANIZED CORPS
 0 AIRBORNE BRIGADES (3,300)

Rebirth of Operational Maneuver

The first major successful Soviet offensive operation using this more mature force structure occurred in November 1942 - in an operation the Soviets named "Operation Uranus," the Stalingrad counteroffensive. In this operation the Soviets used reserve armies, raised and held in the rear by Stalin throughout the summer and fall of 1942, in order to launch a major counterattack against German, Rumanian and Italian forces in the Stalingrad area. The Soviet High Command (the STAVKA) used several of the new mechanized and tank corps as the spearhead of that offensive effort.

The Soviets concentrated their armored forces in order to carry out the critical envelopment operation of German forces at Stalingrad (Map 3). Basically the Soviets used a group of tank corps operating as a part of 5th Tank Army in an attack from the north and a tank and mechanized corps operating as a part of the 51st and 57th Armies in an attack from south of Stalingrad. Their aim was to penetrate the German and Rumanian defenses in both the north and the south, to insert the concentrated tank corps and mechanized corps into combat, and to link them up in the German rear somewhere west of Stalingrad in order to create an encirclement of German 6th and 4th Panzer armies.

The Soviet Stalingrad operation was a success. The Soviets achieved a penetration, committed and linked up their exploiting mobile corps, and encircled German forces within the city of Stalingrad. But in doing so the Soviets learned that an envelopment operation was a far more complicated operation than first met the eye. In fact, the conduct of the Stalingrad operation posed to Soviet planners and operators a whole new series of problems, the solutions to which those planners and operators would work on for the remainder of the Second World War.

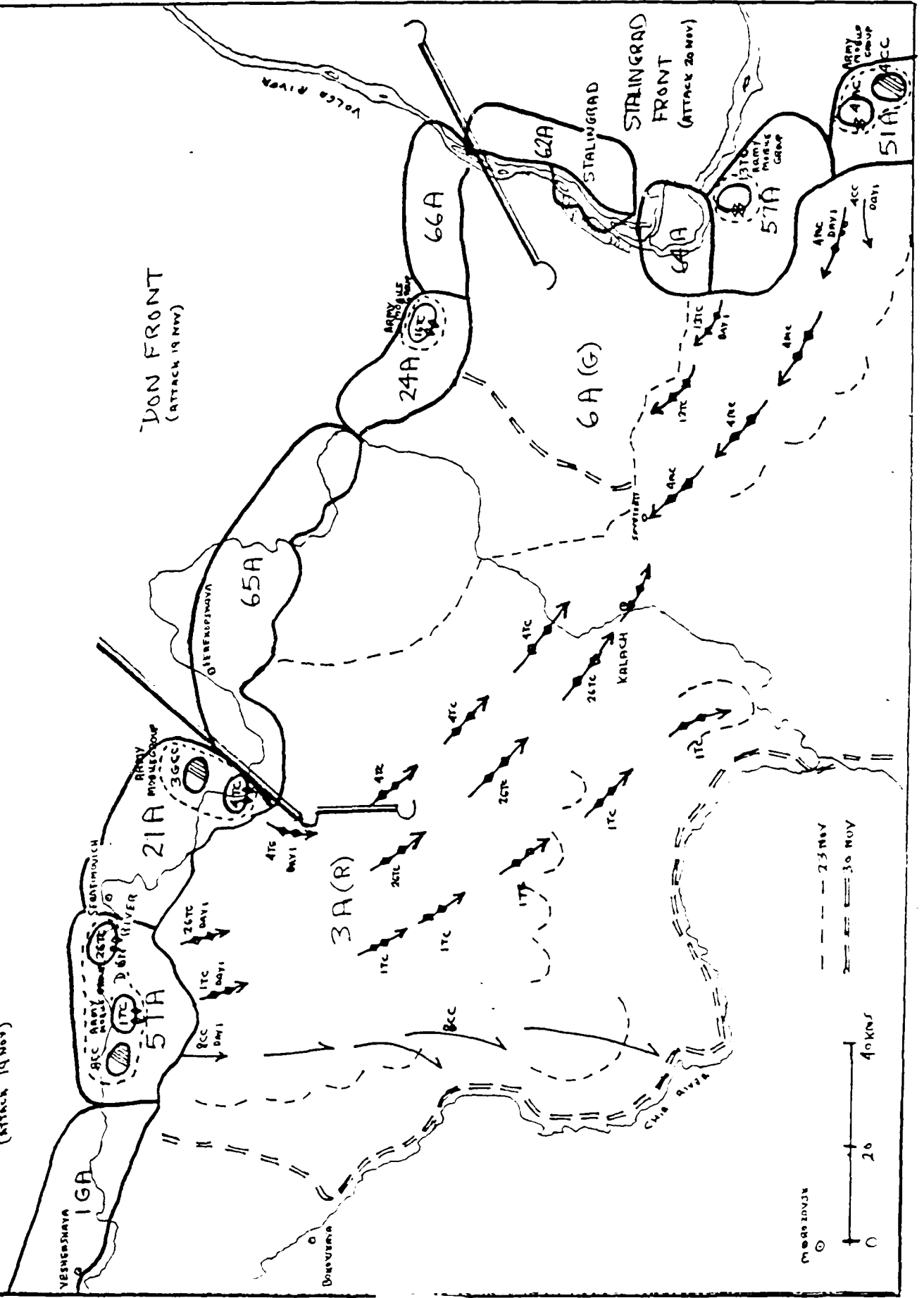
SOVIET OPERATIONAL FORMATION

STALINGRAD OPERATION NOVEMBER 1942

SOUTHWESTERN FRONT
(ATTACK 19 NOV)

DON FRONT
(ATTACK 19 NOV)

STALINGRAD
FRONT
(ATTACK 20 NOV)

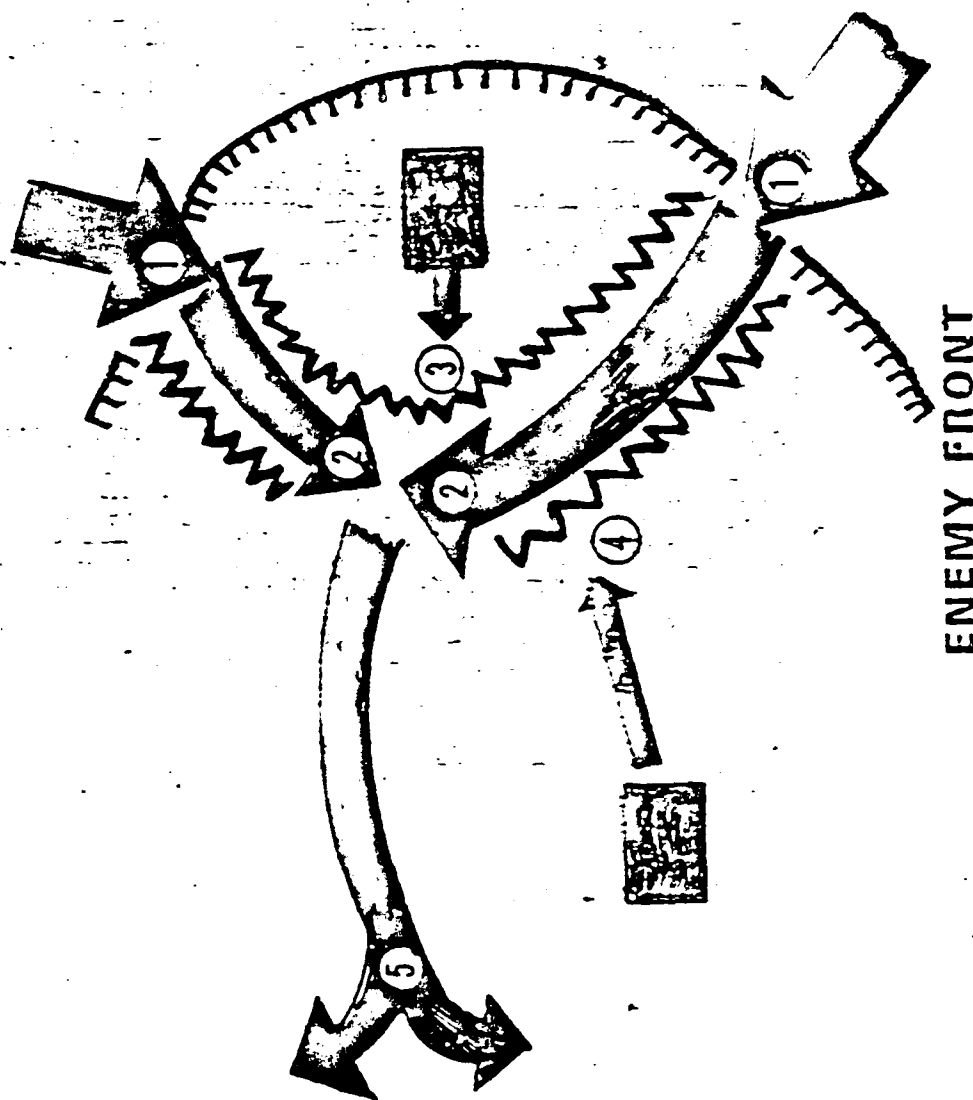


The Soviets learned that there were five basic steps necessary for the conduct of a successful encirclement operation (figure 4). These were steps the Germans themselves had experimented with in the summer of 1941 and 1942 with considerable but not total success. It was clear that to effect an encirclement one first had to penetrate the enemy's defense. This was a rather easy problem to solve. Subsequently, those forces which had conducted the penetration had to exploit and link up, also not a particularly difficult stage of the operation. Once those forces had linked up, an inner encirclement line had to be created around those forces that were encircled to insure they remained entrapped. By the end of 1942, both the German Army and Red Army had conducted these three steps successfully. However, the additional steps were ones that posed greater difficulties. For in order to conduct a successful encirclement one had to also erect an outer encirclement line in order to defend against relief of the encircled force. Ideally, that outer encirclement line also had to be able to continue the offensive operation while the encircled enemy force is being reduced. It was these last two steps that the Germans had difficulty with in 1941 and 1942 and that the Soviets had considerable difficulty with in the winter of 1942 and 1943, beginning with the Stalingrad operation. For no sooner had German forces been encircled in Stalingrad than the Germans began assembling forces to relieve those encircled units. Without any operational pause the Soviets responded by mounting new offensive operations designed to halt German relief attempts, push German forces back, and, if possible, produce an overall collapse of German forces in the southern region of the Eastern Front.

In December 1942 the Soviets began the Middle Don operation, the first of these new offensives (Map 9). Several new operational features emerged in this operation. First, the Soviets improved their concept for massing their armored forces. In the Middle Don operation the Soviets employed four tank corps, all

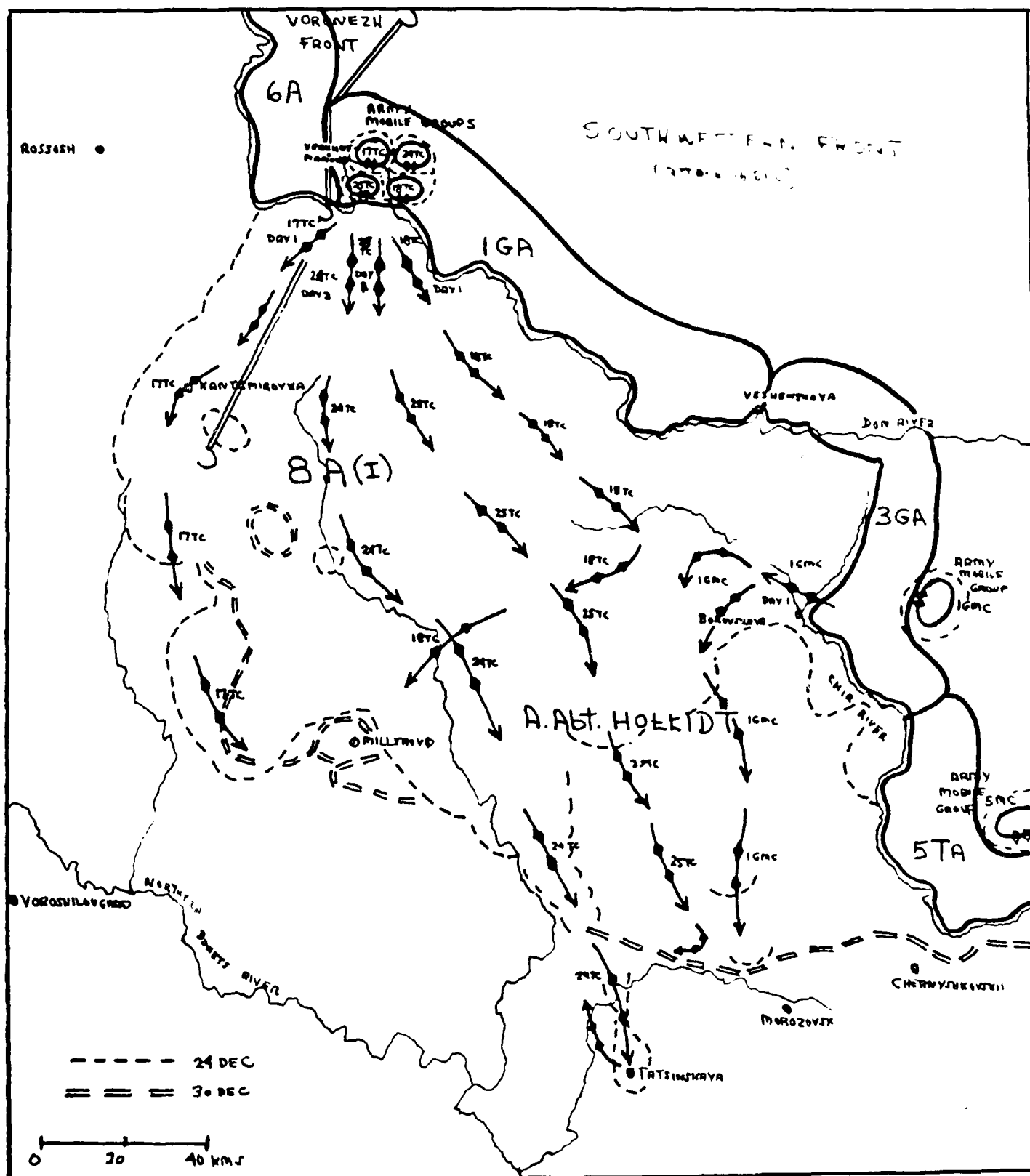
ENCIRCLEMENTS

1. PENETRATION(S)
2. LINKUP
3. INNER ENCIRCLEMENT
4. OUTER ENCIRCLEMENT
5. REDUCE WHILE CONTINUING EXPLOITATION



SOVIET OPERATIONAL FORMATION

MIDDLE DON OPERATION DECEMBER 1942



operating out of the same small bridgehead on the south bank of the Don River. They used those corps in a concerted advance deep into the German rear area, and you can see from the arrows on the map where each of those armored corps advanced. However, the Soviets neglected several critical measures in this operation along the Middle Don. They established no common command and control organization to control the four deep operating tank corps. In fact, each tank corps commander was responsible to both the army commander in whose sector he operated and to the front commander as well. Moreover, these armored forces while pursuing their deep objectives tended to become over-extended and separated from advancing Soviet rifle forces, and in many cases they operated outside of the range of Soviet air forces.

This operation did result in operational success for the Soviets, but by the end of the operation most of the corps involved retained only a fraction of their starting strength. (Most corps began with around 200 tanks and by the end of the operation were down to roughly 25 tanks each.) Because of the lack of centralized command and control, once the Soviets had become over-extended, German forces were able to engage each corps separately (for example, 24th Tank Corps at Tatsinskaya). Moreover, the corps themselves were out of mutually supporting range, hence each was defeated in its own right without being supported by the others. The Soviets learned from their experiences in the Middle Don operation, and they were very quick to apply those lessons learned in subsequent operations.

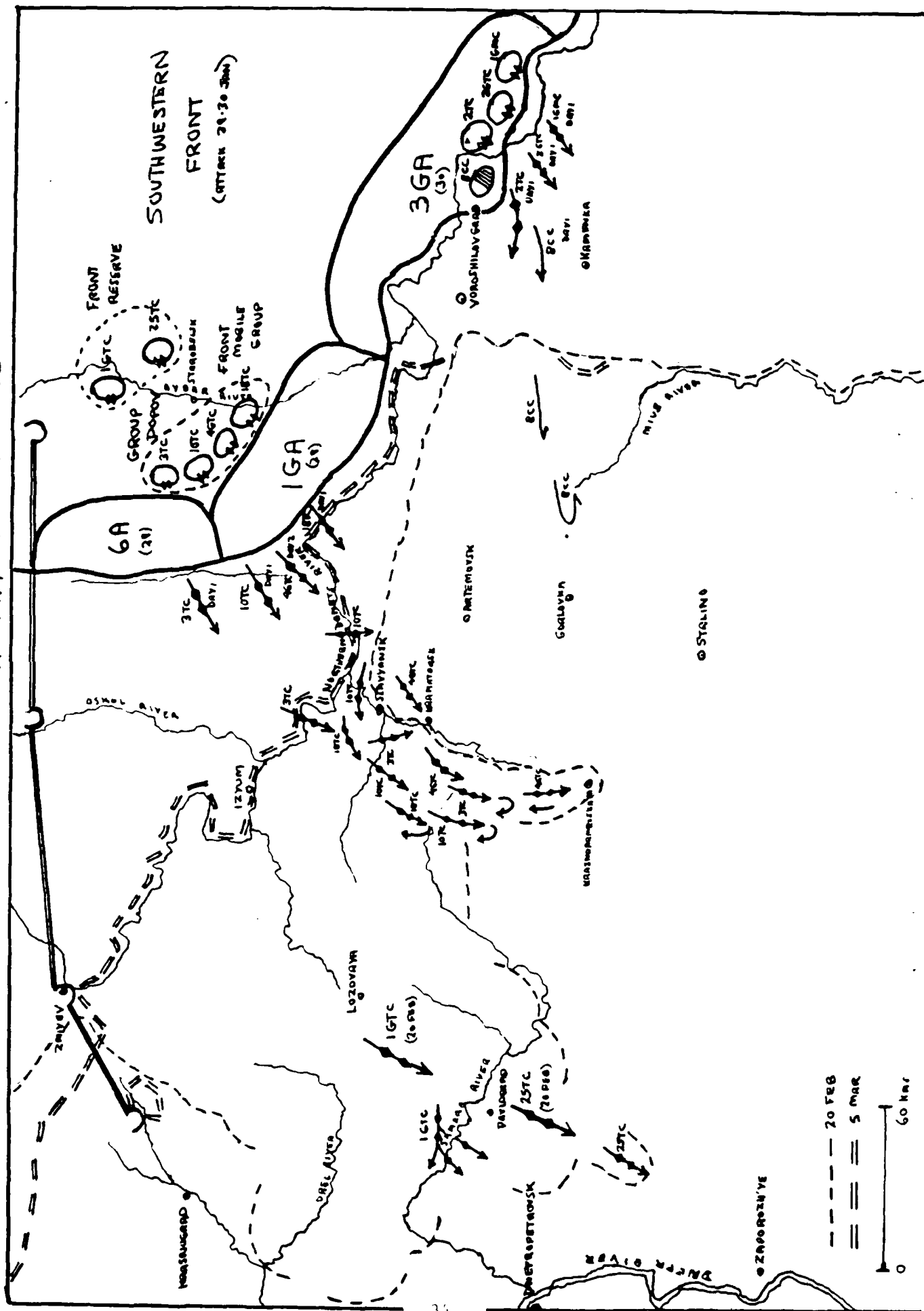
After completion of the Middle Don operation the Soviets conducted a series of front offensive operations which ranged across southern Russia. The Voronezh and Ostrogosh-Roshish operations, extending from the upper Don River all the way south to Rostov, began a series of Soviet attempts to force an ultimate collapse of German forces in the south. Perhaps the most interesting in this new series

of operations was the Donbas operation conducted by the Southwestern Front during January and February of 1943 (Map 10). The Southwestern Front had advanced steadily westward from the Stalingrad region, had created a large gap in German defenses, and had advanced into the rear of Germany Army Group Don. The Southwestern Front commander, General Vatutin, planned to use his large armored forces to spearhead a Soviet advance well into the German rear, if possible all the way to the Dnepr River. His ultimate intent was to produce a complete encirclement of all German forces operating in southern Russia.

The Soviet Southwestern Front had at its disposal for this operation six tank corps, although four of the six tank corps were well below full operating strength. The Soviets also undertook certain measures to make the operations by those tank forces more effective. Vatutin placed four of his tank corps under a single operational headquarters, in this case an operational group - Group Popov. His purpose was to have Group Popov closely coordinate the operations of the four tank corps and keep those corps, if possible, within supporting distance throughout the duration of the offensive. To better improve the sustainability of those tank corps in their deep operations, Vatutin assigned a specific rifle division to cooperate with each of the tank corps and mandated that each of those rifle divisions be provided with a maximum number of vehicles to permit them to keep up with the accompanying armored units. In essence, Group Popov was to function as a mobile group of the Southwestern Front.

However, theory and practice proved to be very different matters. Once Vatutin's offensive opened on 29 January 1943, almost inevitably the corps began operating on separate directions against separate objectives. Moreover, a new problem arose - that of the armored units tending to become involved with reducing individual German strongpoints. That tendency disrupted the overall flow of the offensive plan. Although it seems from the map that all those corps

SOVIET OPERATIONAL FORMATION DONBAS OPERATION JANUARY - MARCH 1943



operated along the same general axis of advance, in fact they operated in staggered sequence and usually out of mutual supporting distance. Only at the very end of the operation, when all four tank corps had been reduced in strength to between ten and forty tanks each, did they finally come together in the same general area. Unfortunately for the Soviets that occurred at the time when the Germans launched a series of successful and devastating counterattacks.

Another problem the Soviets experienced during the Donbas operation was that the Southwestern Front commander held his two strongest tank corps (the 1st Guards Tank Corps and 25th Tank Corps) in front reserve, and when he did commit those reserves to combat he committed them in an entirely different operational sector than Group Popov had begun its operations in. In general, Soviet armored forces in the Donbas operation coordinated with one another very poorly; and they tended to become overextended in their operations. Thus they became subject to German counterattack. Of course, the Germans did counterattack in an offensive orchestrated by Marshal von Manstein, an offensive that ultimately forced the Soviets to withdraw to the Northern Donets River after suffering significant losses. The Donbas Operation ended the winter campaign of 1942 and 1943 on a sour note for the Soviets.

The events that occurred during the winter of 1942 and 1943 had a significant impact on Soviet doctrine and Soviet force structure, for during the operational pause that followed the operations of February and March 1943 the Soviets undertook to digest the lessons they had learned during those frenetic operations across southern Russia. They also undertook a significant reorganization of their force structure to permit it to better carry out offensive operations in the future. The Soviet force structure which emerged in the summer of 1943 was a force structure that in reality would persist throughout 1944 and 1945 with minor refinements (figure 5).

RED ARMY FORCE STRUCTURE

JANUARY 1943

0 RIFLE ARMIES	0 RIFLE ARMIES
0 RIFLE CORPS (A FEW)	0 RIFLE CORPS
0 RIFLE DIVISIONS (9,400)	0 RIFLE DIVISIONS (11,700)
0 RIFLE BRIGADES (6,000)	
	0 TANK ARMIES
0 TANK ARMIES (MIXED COMPOSITION)	0 TANK CORPS (12,000-228)
	0 MECHANIZED CORPS (16,300-183)
0 TANK CORPS (7,800-168)	
	0 CAVALRY-MECHANIZED GROUPS
0 MECHANIZED CORPS (13,600-175)	0 TANK/MECH CORPS
	0 CAVALRY CORPS
0 CAVALRY CORPS	
0 CAVALRY DIVISIONS (4,700)	0 SEPARATE TANK/MECHANIZED CORPS
0 AIRBORNE BRIGADES (3,300)	0 AIRBORNE BRIGADES (3,300)

The major changes in force structure actually had begun in January 1943 when the Soviet High Command mandated the creation of new tank armies, this time tank armies of single type TOE and uniform composition. The new tank armies were made up of two tank corps and an optional mechanized corps. Their armor strength was quite a bit stronger than that of the earlier tank armies. But, more important, their command and control system was much tighter and more effective. These new tank armies numbered between 400 and 600 tanks each, and the Soviets created 5 of them by the summer of 1943.* In addition, throughout the winter of 1943 the Soviets improved their tank and mechanized corps' structure by adding to them those elements necessary to better sustain armored operations deep in the enemy rear. Throughout 1943 the Soviets also re-established rifle corps in most of their rifle armies. In essence there was a growing sophistication in the Soviet force structure; a sophistication readily apparent by the summer of 1943.

The operational pause that occurred between March and July of 1943 also enabled the Soviets to capture in their doctrinal works the many lessons derived from their experiences in the winter. They developed techniques and procedures for the use of their new force structure, and many of those techniques and procedures reached full fruition in July of 1943 when the Germans conducted their last strategic offensive, the offensive at Kursk. For the first time in the war, in the summer of 1943 the Soviets demonstrated their new operational maturity by allowing the Germans to conduct a strategic offensive operation without Soviet attempts to preempt and by conducting a strategic defensive operation to match the German offensive effort. Although the Soviets showed great restraint in their decision to conduct a strategic defensive operation, they nevertheless incorporated into their planning the conduct of two major

*And a sixth in early 1944.

counterattacks or counterstrokes to be launched as soon as the German offensive wave ebbed. Those two offensives did occur, one in mid-July during the German attack and one in early August, shortly after the German attack at Kursk failed.

It was during those new waves of counteroffensives that the Soviets revealed to the Germans this new, more mature force structure, a force structure capable of much greater operational success than its predecessor had been. Thus the events of the winter of 1942 and 1943 culminated in a new stage in the conduct of Soviet operations, a stage that would commence in July of 1943 and lead to the greater Soviet victories of 1944 and 1945.

Maturation of Operational Maneuver

The first successful operation of this new stage of war occurred during and after the German offensive at Kursk in July and August of 1943. In the first of these counteroffensives at Orel and, in particular, during the second at Belgorod-Khar'kov you can clearly observe the improvements in Soviet force structure that enabled them to carry out more successful operational maneuver. The Belgorod-Khar'kov operation commenced on 3 August 1943 (Map 11). In the Belgorod-Khar'kov operation the Soviets concentrated a large force, however that force had gone through a very rapid period of preparation following the intensive combat at Kursk. The operation involved the participation of two Soviet fronts, the Voronezh Front and the Steppe Front, fronts whose mission was to reduce the German salient containing the cities of Belgorod and Khar'kov.

One of the most notable features of the Soviet offensive was the proliferation of Soviet armored units participating in the attack. In general, Soviet armies on main attack axes had subordinate to them a full tank or mechanized corps. These tank and mechanized corps had the specific mission of exploiting the tactical penetration generated by army rifle forces. Thus they were to begin operational maneuver. In addition, Soviet front commanders for the first time in the war had at their disposal full tank armies, armies which numbered over 500 tanks each. These armies were to capitalize on the success of other rifle and mobile forces and perform the function of deep operational maneuver. Thus in this operation Soviet commanders possessed the largest mobile force yet available to Soviet commanders during the war.

The Soviet concept of the operation was a rather simple one. It involved a direct attack on the nose of the German salient by four armies of the Voronezh

BELGOROD - KHAR'KOV OPERATION AUGUST 1943



Front (the 40th, 27th, 6th Guards and 5th Guards) and by two armies of the Steppe Front (the 53rd and 69th). Those armies would conduct the penetration operation north and northwest of the city of Belgorod and would commit their operational maneuver forces, the tank and mechanized corps, in order to begin the operational exploitation. Thereafter, the two large tank armies would advance to combat in an exceedingly narrow sector and would carry out a deep operational exploitation into the region west of Khar'kov. Ultimately they would encircle Khar'kov and in doing so destroy German 4th Panzer Army and Army Detachment "Kempf."

During the Belgorod-Khar'kov operation Soviet forces conducted a successful penetration operation and committed their maneuver forces to battle successfully. Ultimately those armored forces drove to a depth of some 120 kilometers before German reinforcements fought those units to a halt. However, in this operation the Soviets uncovered a whole new set of problems, problems which they then worked on solving during the remaining two years of the war. Many of those problems related to command, control, and coordination of forces. In particular, the Soviets discovered that once those armored forces were committed to deep operations, because of their higher degree of mobility, they tended to become separated from supporting rifle units and also supporting artillery. Thereafter the armored units became more vulnerable to German counterattacks. To compound this problem, there was also a tendency for the armored units themselves to become over-extended with lead elements (forward detachments) operating up to thirty kilometers distant from follow-on elements. The large gaps between those separated elements rendered the armored force spearhead highly vulnerable to German counterattack. In addition to these command and control difficulties the Soviets ran into problems of sustainability in terms of fuel, ammunition, and all of those logistical items necessary to sustain deep

operations. There were also problems in coordinating the air support essential to the survival of the force deep in the German rear area. Those problems would take years to solve. Nevertheless, the major operational feature apparent in August 1943 in the Belgorod Khar'kov operation was that the Soviets were able to insert large forces deep into the German rear, they were able to advance over 100 kilometers, and they were able to fight German operational reserves to a virtual standstill. Moreover, this was the first time in the war that the Soviets had not been forced to give up major chunks of territory to German counterattacks.

Even more important, perhaps, was the fact that these large Soviet armored forces exacted a considerable toll in terms of manpower and armored strength on those critical and increasingly scarce German operational reserves. After the conclusion of the Belgorod-Khar'kov operation German armies had no choice but to withdraw several hundred kilometers to a new defensive line extending along the Dnepr River.

Throughout 1944 and 1945 the Soviets conducted over one hundred front offensive operations. Many of those operations involved the use of large mechanized forces under control of army and front commanders. Examination of several of the most important operations will show the tremendous strides made by the Soviets in their ability to conduct successful operational maneuver. Since the war Soviets have investigated and are still investigating these operations in the belief that they are relevant to contemporary and future combat.

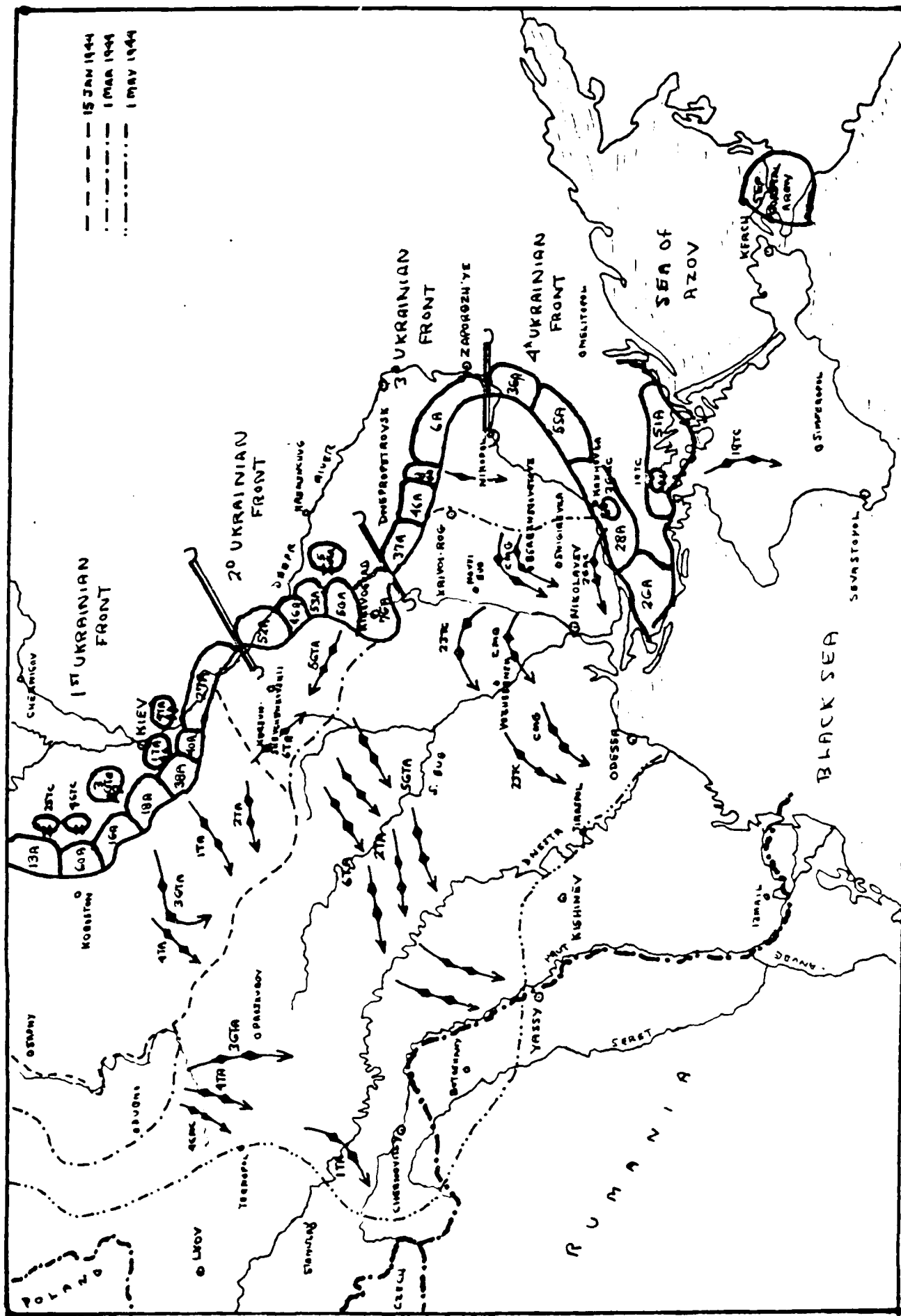
The first series of Soviet offensives to occur in 1944 took place on what the Soviets call the right bank of the Ukraine. In reality, these offensives were an extension of those that occurred in December 1943. Taken together the operations formed a major strategic offensive. During the Right Bank of the Ukraine strategic operation the Soviets conducted eight front operations

simultaneously and/or successively, and all were successful. In virtually every one of these operations the Soviets used large operational maneuver forces in the form of tank corps, mechanized corps, multiple tank armies, or what the Soviets called cavalry-mechanized groups (a unit which emerged in 1943 and was a mixture of cavalry and mechanized forces). Moreover, they conducted these operations during a time of the year when the weather had previously inhibited operations. In the spring of 1944 the Soviets continued to conduct active front operations right through March; April; and May, through the famous period of razputitsa or thaw, during which Russian soil normally turns into a quagmire.

The right bank of the Ukraine operation involved offensive operations by the 1st, 2d, 3d and 4th Ukrainian Fronts (Map 12). In virtually all of the operations the Soviets made widespread use of tank and mechanized corps and tank armies. The arrows on the map delineate where those tank forces operated. Moreover, most fronts had subordinate to them at least one; sometimes two; and, in one case, three tank armies. The net effect of the successful use of those tank armies was that by April 1944 Soviet forces advanced all the way to the Rumanian-Soviet border.

The 1944 operation that the Soviets are most proud of, and indeed it was one of the most sophisticated Soviet operations, was the Belorussian operation or, as the Soviets call it, Operation Bagration. The operation commenced on 22 June 1944 against the three German armies of Army Group "Center." Bagration was indeed an ambitious operation, for it involved the forces of four Soviet fronts operating on very broad frontages against very deep objectives. Moreover, it involved the deliberate conduct of simultaneous and successive envelopment operations. The overall Soviet operational aim was to encircle by means of simultaneous envelopments German forces around the cities of Vitebsk, Minsk and Bobryusk (3d Panzer Army, 4th Army and 9th Army respectively). Then, after

RIGHT BANK OF THE UKRAINE OPERATIONS



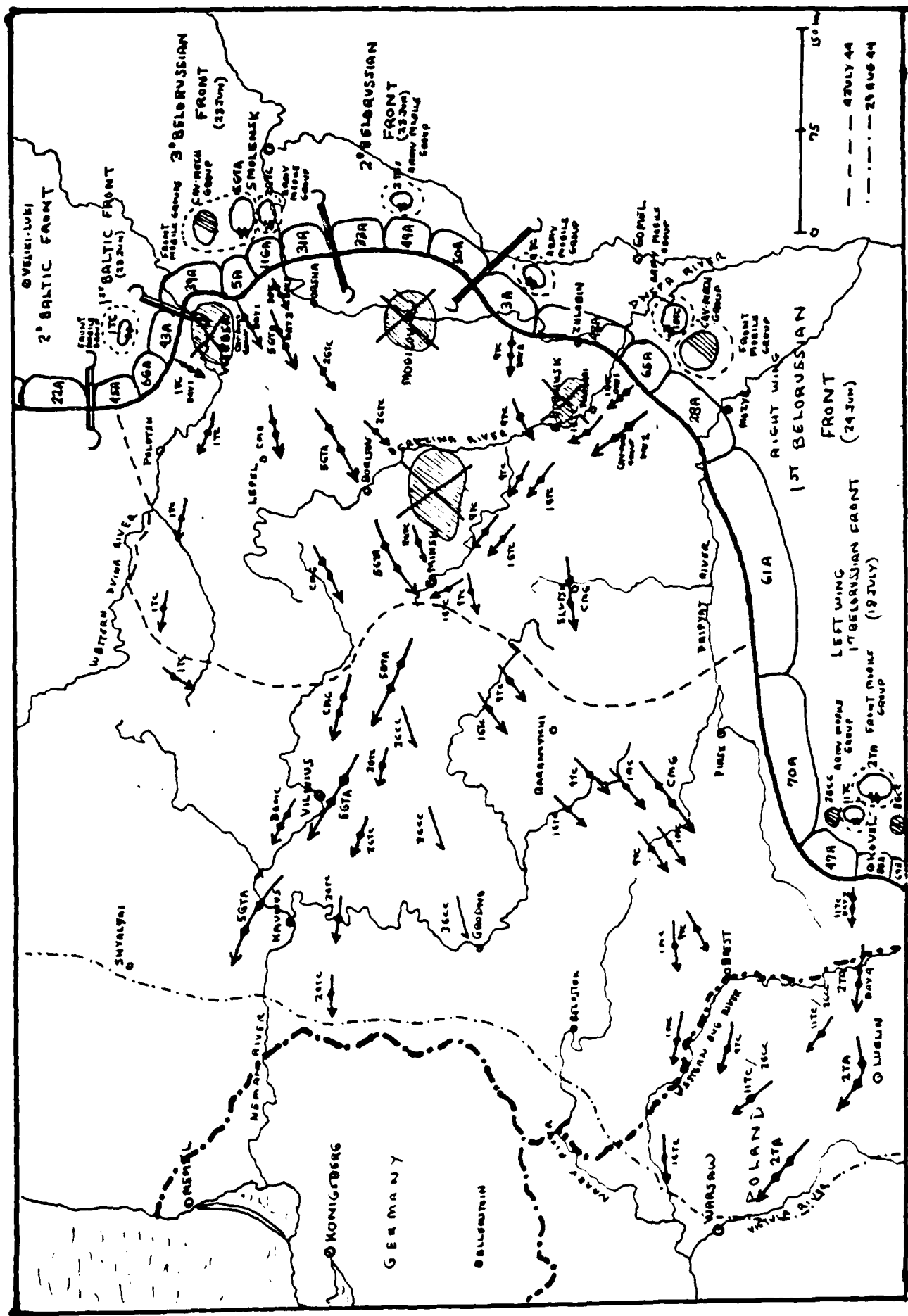
German forces in the forward defenses had been encircled, the Soviets sought to conduct a deeper encirclement of all German forces forward of Minsk and then pursue German forces as far west as the East Prussian border.

Soviet tank, mechanized and cavalry forces played a decisive role in the Belorussian operation (Map 13). Generally speaking the Soviets relied on their tank and mechanized corps to conduct the shallow envelopments and to pinch off German forces in the three major cities. They then used their larger mechanized forces, in this case 5th Guards Tank Army and a Cavalry-Mechanized Group in the north and a Cavalry Mechanized group in the south, to conduct the deeper envelopment of Minsk and spearhead the exploitation all the way to the border of Germany. This operation was an immense Soviet success. Large German forces were encircled at Vitebsk, Bobryusk, Mogilev, and east of Minsk. In actuality the operational objectives achieved exceeded Soviet expectations, and by the end of July 1944 Soviet forces had already reached the East Prussian borders of Germany. The Germans were finally able to stabilize the front at the end of August 1944.

In August of 1944, just as the Belorussian operation was grinding to a halt, the Soviets conducted the Yassy-Kishinev operation against German and Rumanian forces in Rumanian Bessarabia (Map 14). In this operation the Soviets also relied primarily on operational maneuver and encirclement to achieve offensive success. The Soviets have studied this operation intensely since the war years because while conducting it the Soviets successfully solved all five steps of an encirclement operation. The Yassy-Kishinev operation involved offensive operations by the 2d Ukrainian Front and the 3d Ukrainian Front. After penetrating the German defenses each front then exploited the successful penetration with tank and mechanized corps which enveloped German forces in the Yassy and Kishinev areas. Simultaneously, larger Soviet armored forces, in this

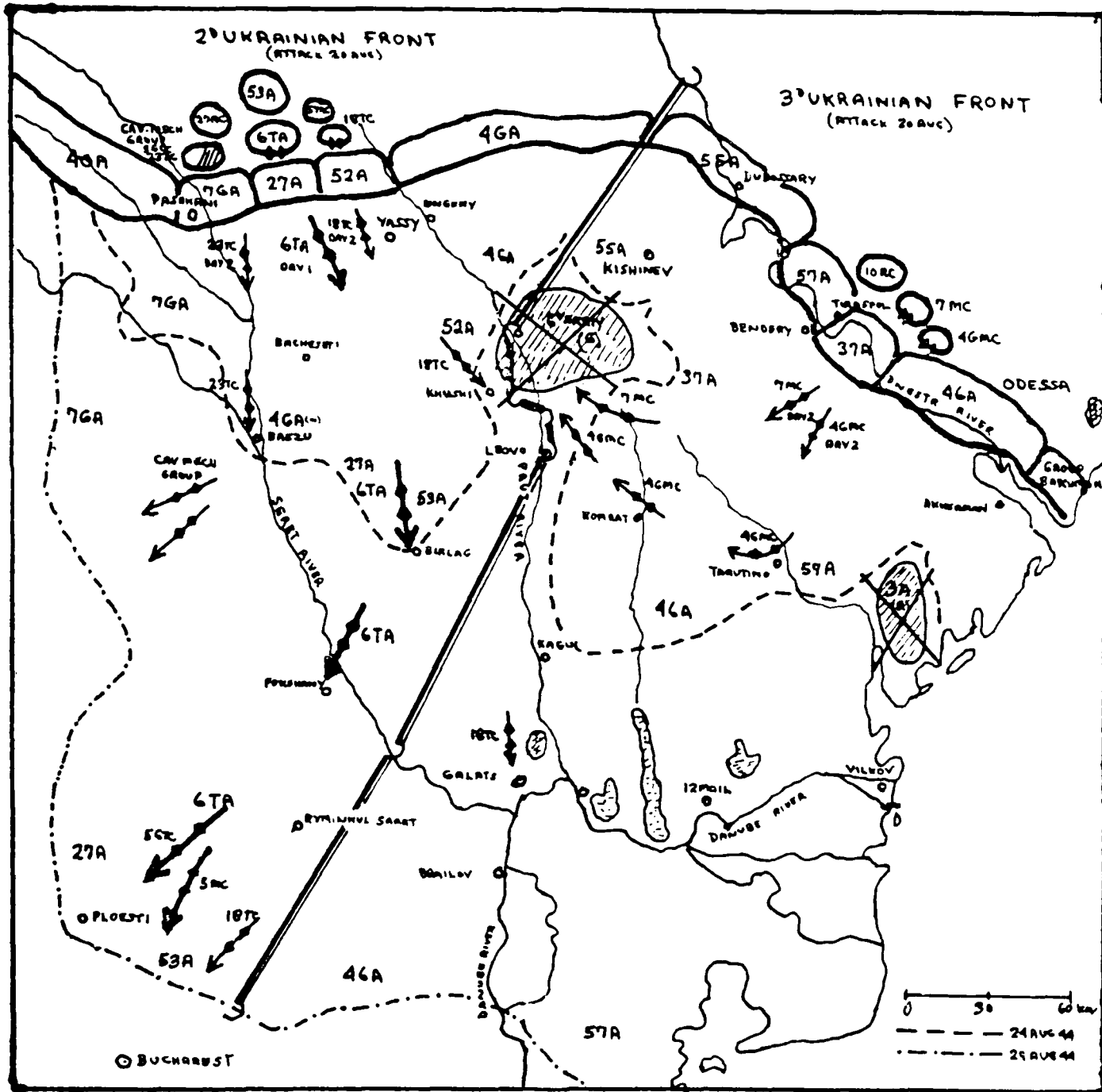
SOVIET OPERATIONAL FORMATION

BELORUSSIAN OPERATION 23 JUN - 29 AUG 1944



SOVIET OPERATIONAL FORMATION

YASSY. KISHINEV OPERATION 20-29 AUG 1944



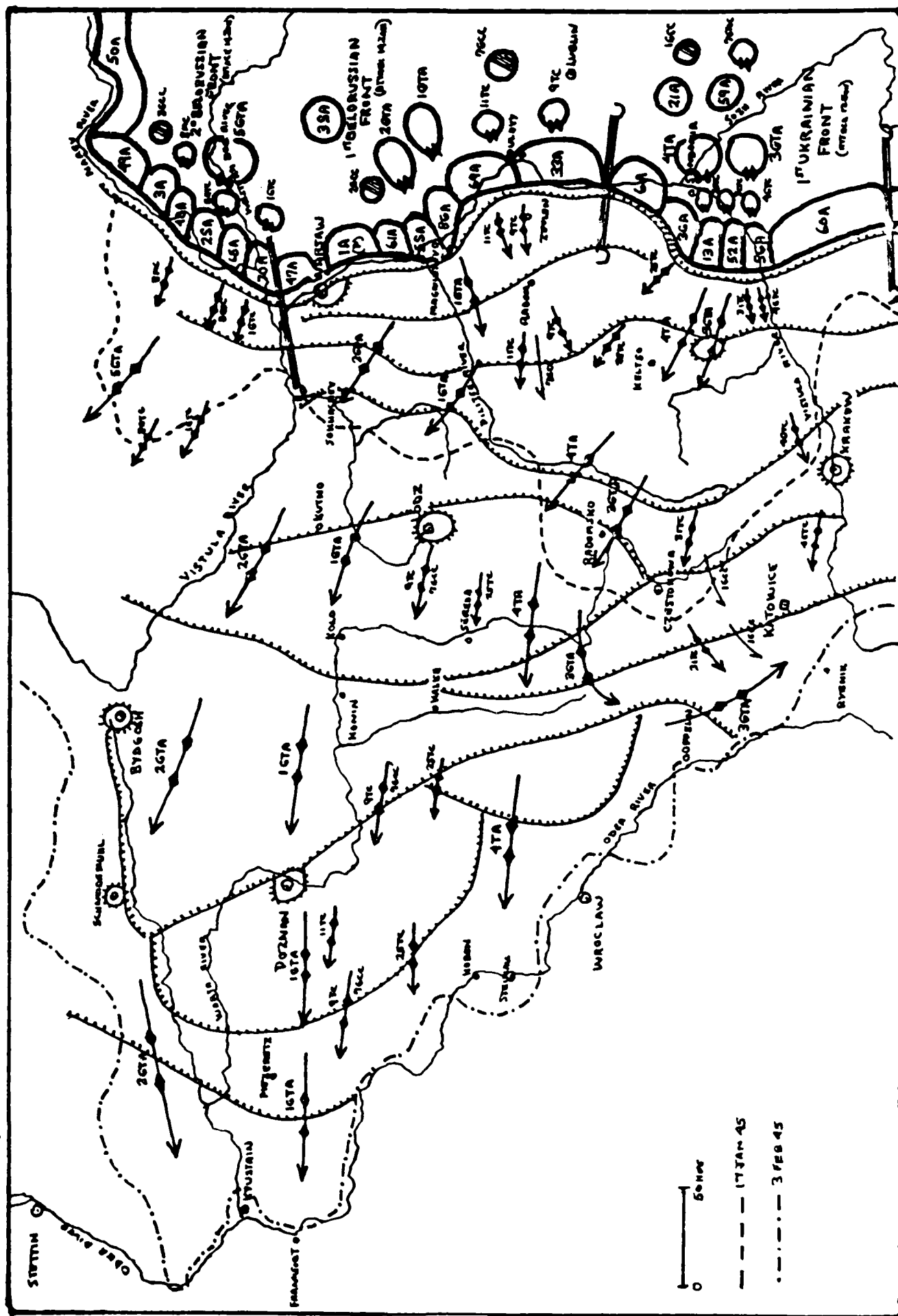
case 6th Tank Army and a Cavalry-Mechanized Group, continued the attack deeper into Rumania to the city of Bucharest, into Bulgaria, and ultimately westward across the Carpathian Mountains into Hungary. Again the Soviets exceeded their expectations, and the operation produced the collapse of the Rumanian Army and the loss of a good portion of German Army Group "South Ukraine." Most of the credit for the success of that operation went to Soviet mechanized forces who carried out the envelopment and the deep pursuit operations.

In 1945 Soviet mobile operations became even more ambitious in scale and scope, thus reflecting growing Soviet competence and also German weakness. Since the war the most studied of all the Soviet operations has been the Vistula-Oder operation which occurred in January and early February of 1945. This was an operation that commenced south of Warsaw along the Vistula River (Map 15). During the operation Soviet forces of the 1st Belorussian and 1st Ukrainian Fronts broke out of bridgeheads on the west bank of the Vistula River and attacked westward in hopes of liberating the bulk of German occupied Poland. An imposing array of Soviet armor supported the offensive at virtually every command level. In every case, armies operating on main attack axes had subordinate to them one full tank or mechanized corps. The front commander of each of the two attacking fronts had subordinate to him two full tank armies. In these operations the Soviets employed a mobile force structure capable of conducting and sustaining deep maneuver. As was the case in Belorussia and in Rumania the Soviets achieved more than they expected in the operation.

The operation illustrates the flexible manner in which the Soviets employed their mechanized forces. The map shows the axis of advance of each of the mechanized and tank corps and of the tank armies. More importantly, you can see beneath those arrows the time (in days) those forces were committed to combat. Virtually every tank and mechanized corps entered combat on the first day of

SOVIET OPERATIONAL FORMATION

VISTULA-ODER OPERATION 12 JAN - 3 FEB 1945



operations, generally with the task of completing the penetration of the German tactical defense. The tank armies, however, were committed in a different fashion by each the two front commanders. The 1st Ukrainian Front commander committed his tank armies very early in the operation. Those armies generated an offensive momentum which carried them to great depths very quickly. On the other hand the 1st Belorussian Front commander held back his tank armies until his rifle forces and mechanized and tank corps had penetrated through the full depth of the enemy tactical defenses. Then, several days into the operation, he committed his tank armies. The net effect was basically the same as that realized in the 1st Ukrainian Front sector. Specifically, a tremendous forward momentum was generated that ultimately carried Soviet forces to the Oder River and beyond, within 60 kilometers of Berlin itself.

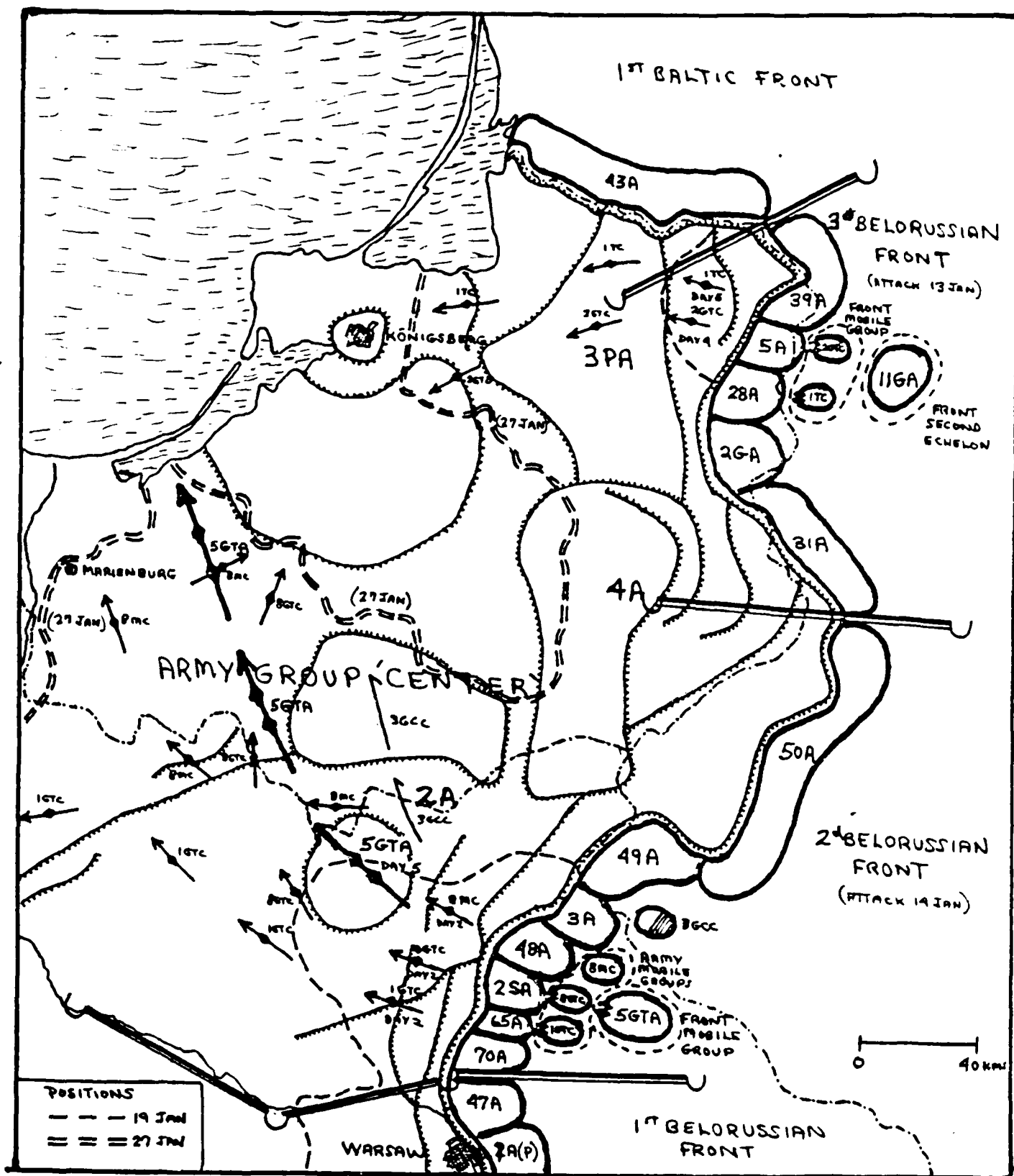
While the Vistula-Oder operation was under way another operation occurred further north. This operation, called the East Prussian operation, also represents something of a model of the way in which the Soviets conducted operational maneuver in 1945 (Map 16). In the operation army commanders again had available full tank or mechanized corps to use to conduct operational maneuver. The front commander of each of the fronts also had available a front mobile group for deep exploitation; in the case of the 3d Belorussian Front two tank corps and in the case of the 2d Belorussian Front a full tank army (5th Guards). Again the date of their commitment and the effect of their commitment can be seen graphically. Considerable offensive momentum was generated by the carefully timed commitment to combat of these armored forces.

The last Soviet offensive operation of the war displayed certain characteristics that differentiated it significantly from wartime operations in Eastern Europe or in the Soviet Union. This was the operation the Soviets conducted in August 1945 against Japanese forces in Manchuria (Map 17). The

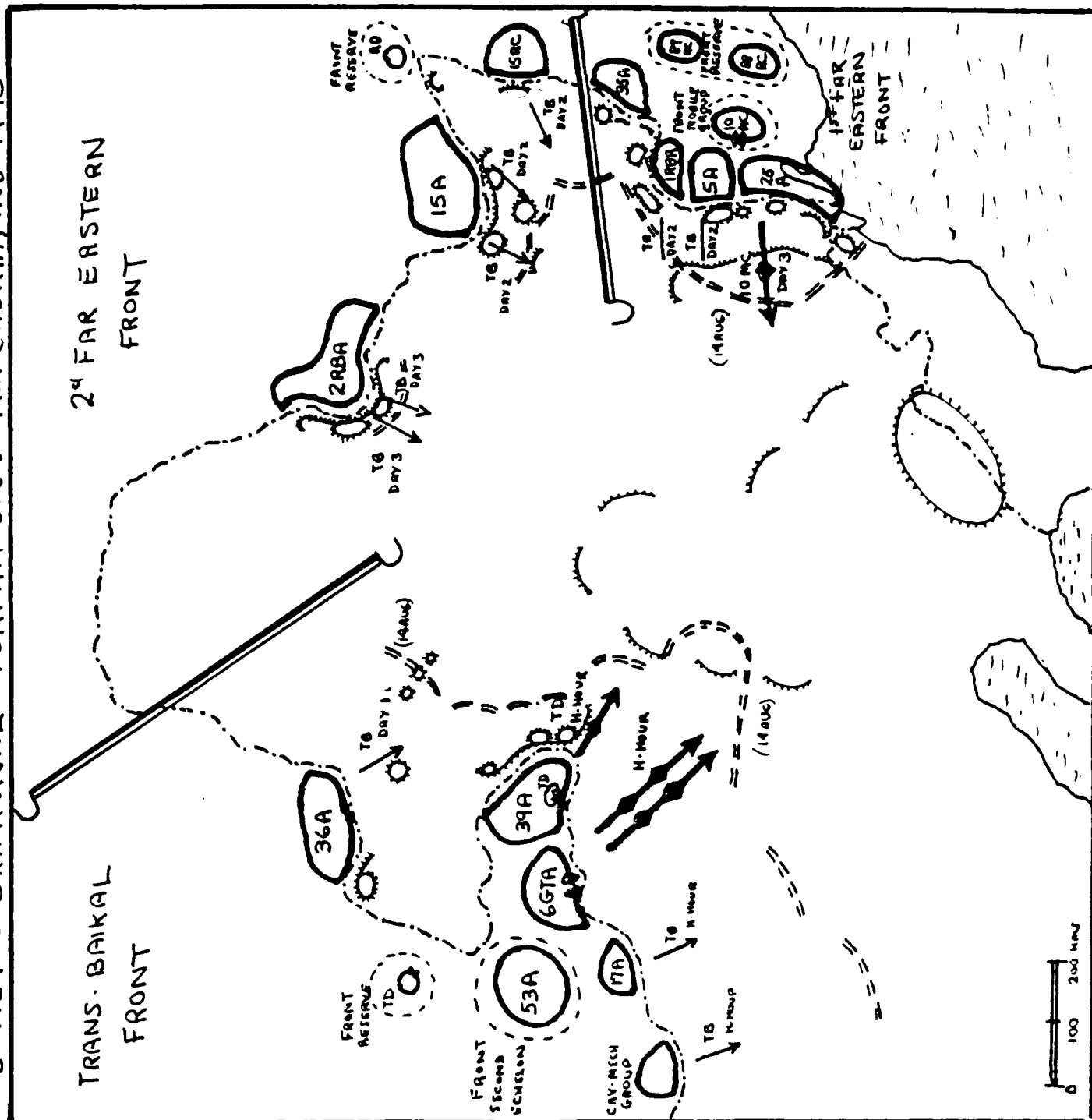
SOVIET OPERATIONAL FORMATION

EAST PRUSSIAN OPERATION

13-27 JANUARY 1945



SOVIET OPERATIONAL FORMATION: MANCHURIA, AUG 1945



Soviets in the Manchurian operation were confronted with a new set of problems, problems which the Soviets believe are somewhat analogous to problems that current planners and operators may have to face. The Soviet operation in Manchuria was a true strategic operation in every sense of the word. It involved operations by large forces (1,500,000 men) against large forces (over 700,000 men) deployed in an extremely large theater of operations along a front of almost 3,000 kilometers. Moreover, it was a theater of operations which required an advance to a considerable depth (900 to 1000 kilometers) if a force desired to penetrate into the very center of Japanese occupied territory. Even more importantly, the region of Manchuria contained a very difficult terrain to operate over. Exceedingly difficult terrain (mountains, swamps, deserts, and heavy forests) insulated the key central areas of Manchuria from the outside, and this peripheral region lacked any substantial road or rail network. In fact, cracking through the outer shell of Manchuria and reaching the heart of Manchuria would, of necessity, involve widespread large scale operations over exceedingly difficult terrain.

The most significant aspect of the Manchurian operation for Soviet military planners was the necessity for conducting the operation rapidly. The imperative of time confronted Soviet political and military planners and operators because of American use of the atomic bomb at Hiroshima. Thus, it was necessary for Soviet forces to occupy Manchuria fully before Japan left the war and signed a peace or an armistice. Consequently, the Soviets employed certain rather radical operational and tactical techniques in their conduct of offensive operations in Manchuria, however, measures that had been tested on earlier occasions in eastern Europe.

First, they deployed all of their forces well forward with the three operating fronts arrayed in single echelon formation. In addition two of the

three fronts deployed their forces in a single echelon configuration. This forward deployment was supposed to impart overwhelming momentum and speed to the Soviet advance. Second, each of the three fronts either led the offensive with large armored formations or committed armor forward very shortly after the operation began. The Soviets relied on the forward use of armored forces in Manchuria at virtually every command echelon. The Trans-Baikal Front, operating in Western Manchuria, led its offensive with 6th Guards Tank Army, a specially tailored army reinforced by motorized rifle forces and consisting of over 1,000 tanks and self-propelled guns. 6th Guards Tank Army's mission was to traverse over 100 kilometers of desert, cross a mountain range which contained no roads and very few tracks, and advance over 500 kilometers within a 4-day period to preempt Japanese defenses. Other forces of the Trans-Baikal Front conducted operations in similar fashion and under similar circumstances. The 39th Army, attacking out of extreme Eastern Mongolia, led its operations with a full tank division in advance, while each of its rifle corps led their operations with a full tank brigade. The same applied to other armies.

The initial use of armored forces well forward permitted those forces to traverse very difficult terrain, bypass heavy Japanese fortifications, and plunge deep into Manchuria. The net effect of this imaginative use of armor in western Manchuria was that the Soviets in a matter of five days time managed to traverse over 450 kilometers of terrain and totally preempt Japanese defenses. Moreover, the armored thrusts resulted in a total paralysis of Japanese command and control, an almost total loss of Japanese control over their rather large but scattered forces, and a total inability on the part of the Japanese to deal with the rapidly advancing Soviet forces. Today the Soviets consider the Manchurian operation a microcosm of the types of problems that modern armies face in theater operations in respect to the overcoming of time constraints by the conduct of rapid operations and in regard to preempting defenses before they have jelled.

Maneuver in the First Postwar Years (1946-1954)

While Soviet wartime operational experiences ceased in 1945, the Soviets continued to exploit those massive and varied experiences. The Soviets, by their very nature, study their experiences and learn from them. Moreover, their experiences are probably more extensive in terms of the magnitude and number of large scale operations than those of any army that presently exists. The Soviets in the postwar years have made extensive use of that experience and still do today, both in the tailoring of their forces and in the generation of doctrine for the use of those forces.

Soviet postwar force structure and military doctrine naturally closely reflected the Soviet experience in the last two years of war. In 1946 the Soviets reorganized their forces to incorporate basic refinements made in 1944 and 1945 (figure 6). This generally involved the incorporation into unit TOEs of those forces that they had attached to operating units during the latter wartime years. For example, the Soviet wartime tank and mechanized corps became full tank and mechanized divisions in the postwar years and the Soviet tank armies became mechanized armies. Those new mechanized armies, incidentally, looked very similar to the specially tailored 6th Guards Tank Army that had operated in August 1945 in Manchuria.

In addition to the new mechanized armies the Soviets formed combined arms armies which were in essence reshaped versions of the older rifle armies. The new combined arms armies consisted of from two to three rifle corps, and the rifle corps in turn consisted of rifle divisions, now with a significantly larger contingent of armor within them, and mechanized divisions, also beefed up.

SOVIET ARMY FORCE STRUCTURE

1946-1956

0 COMBINED ARMS ARMIES

0 RIFLE CORPS

0 RIFLE DIVISIONS (13,300-77)

0 MECHANIZED DIVISION (13,400-269)

0 MECHANIZED ARMY

0 MECHANIZED DIVISIONS

0 TANK DIVISIONS (13,700-426)

0 AIRBORNE DIVISIONS/BRIGADES

1958-1962

0 COMBINED ARMS ARMIES

0 MOTORIZED RIFLE DIVISIONS (13,700-220)

0 TANK DIVISION (10,900-350)

0 TANK ARMIES

0 TANK DIVISIONS

0 MOTORIZED RIFLE DIVISION

0 AIRBORNE DIVISION (7,000)

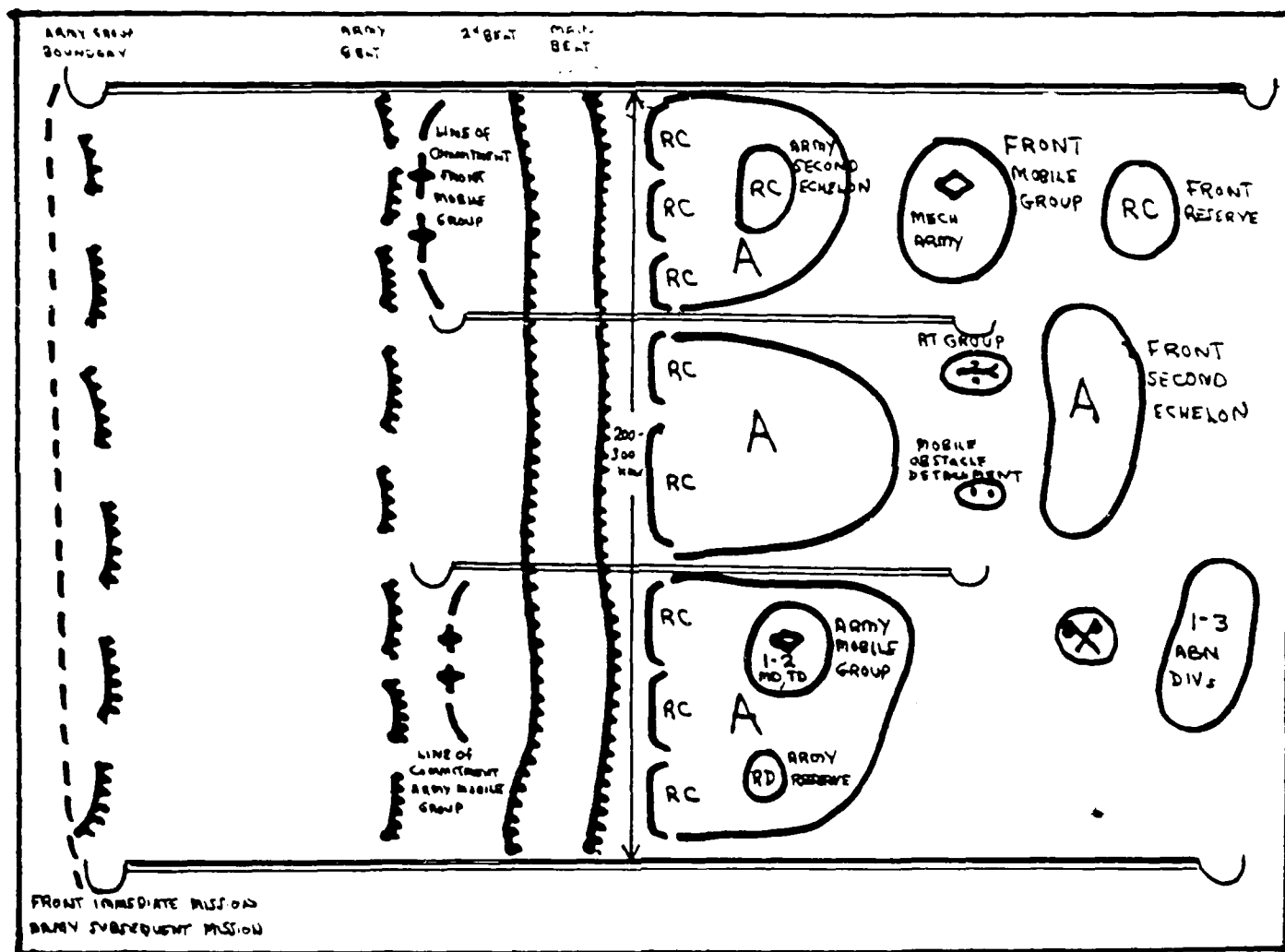
versions of the wartime mechanized corps.* This postwar army was an army that drew upon the mobile experiences of 1944 and 1945 and an army which had available within it large scale mechanized forces capable of conducting operational maneuver at the corps, army, and front levels. Moreover, although mobile, these forces were also very heavy.

In the immediate postwar years Soviet front operational formations reflected very closely the way in which Soviet fronts had operated in 1944 and 1945 (figure 7). The primary Soviet force within the front capable of conducting the penetration operation was the combined arms army consisting of rifle corps and support units. Each of these combined arms armies contained an army mobile group, a group specifically assigned the task of operational maneuver and exploitation. The army mobile group consisted of one or two mechanized divisions or tank divisions. In addition, the front commander had available for employment a front mobile group in the form of the beefed up and very heavy mechanized army which was designated to conduct operational maneuver in accordance with the front commander's plan.

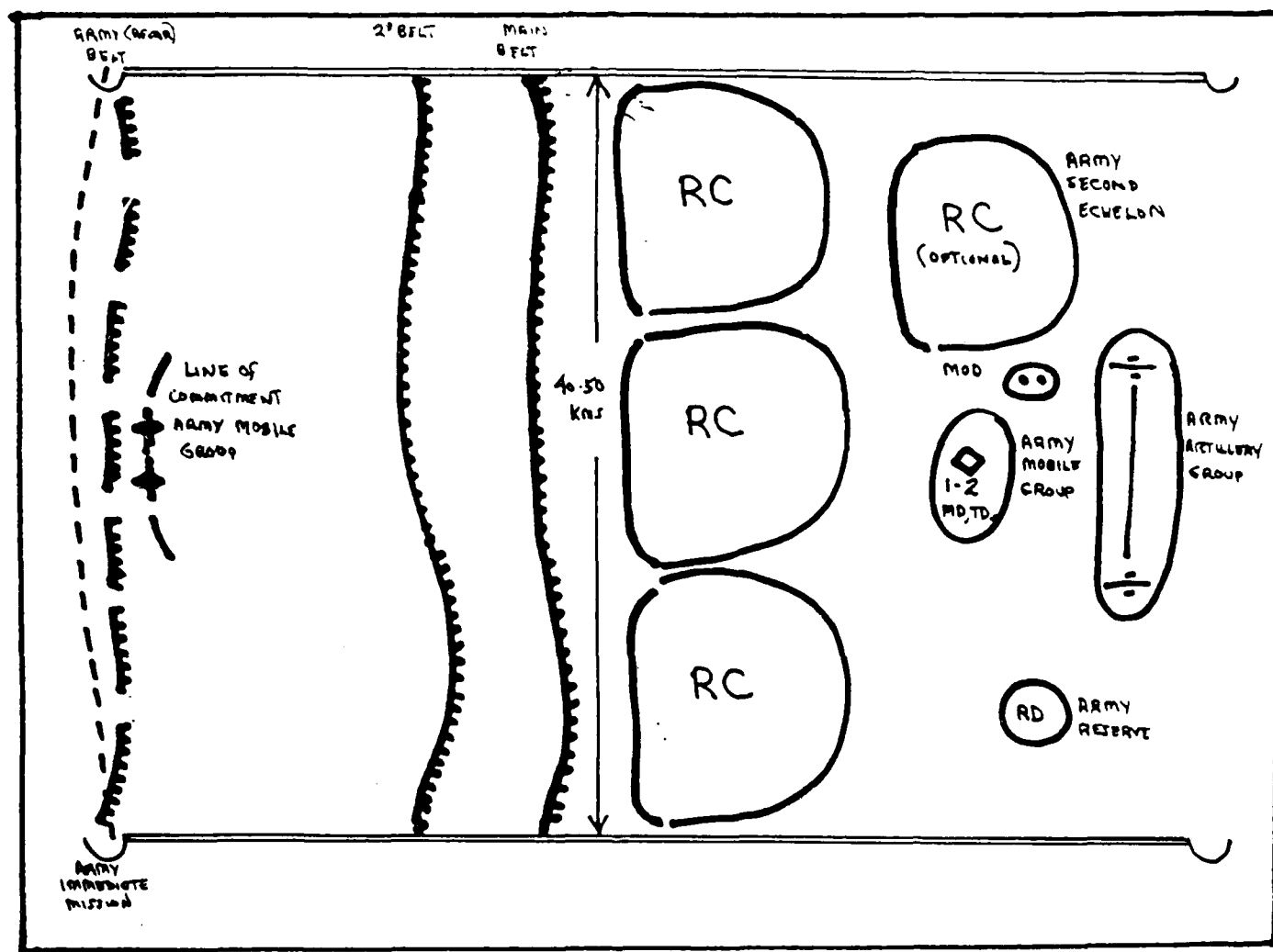
The army operational formation also displayed an increased capability on the part of the army commander to conduct operational maneuver (figure 8). In addition to possessing one or two tank or mechanized divisions which he could use as his own exploitation force, each of his rifle corps had one mechanized division which was also capable of conducting limited operational maneuver. Thus there were heavy mechanized forces integrated within the rifle corps, within the combined arms army, and within the front that could be committed to combat successively to develop operational maneuver at greater offensive depths than had been the case in the period prior to war's end.

*Rifle corps had three rifle divisions or two rifle divisions and one mechanized division. New type rifle divisions, introduced slowly after 1943, had a significant number of vehicles and ultimately some APCs as well.

FRONT OPERATIONAL FORMATION 1946-1953



ARMY OPERATIONAL FORMATION - 1946-1953



Impact of The Zhukov Reforms

However, times change as do weapons, commanders, and political leaders. True to that axiom, after the death of Stalin in 1953, the Soviet army began to change. The changes occurred for a variety of reasons: first, because of new political leadership; second, and perhaps more importantly, because of the necessity for taking into account the impact of nuclear weapons on the battlefield. By 1954 that impact was becoming rather apparent. Responding to that challenge, between 1954 and 1958 the Soviets went through a distinctive process of rethinking their military doctrine and restructuring their armed forces. The initial changes during that period were instituted by Marshal Zhukov as Minister of Defense; but, even after Zhukov's removal, Marshal Malinovsky continued the basic Zhukov reforms.

Those reforms changed the face of the Soviet military in general and, in particular, the configuration of Soviet ground forces. The most fundamental changes occurred within the mechanized forces because by 1954 the Soviets considered that their large mechanized armies and divisions were simply too large and cumbersome, and hence, too vulnerable to survive on the emerging nuclear battlefield. Very simply stated, they were too lucrative a nuclear target.

The aim of the Zhukov force structure reforms was twofold, to maintain a highly maneuverable yet less vulnerable force and to make all Soviet forces equally maneuverable on the battlefield. Hence, Zhukov abolished the large mechanized armies and replaced them with new, smaller tank armies (figure 9). He also abolished the mechanized divisions and the older rifle divisions and in their stead created streamlined motorized rifle divisions. The new combined arms army was made up of a mixture of motorized rifle divisions and tank

SOVIET ARMY FORCE STRUCTURE

1946-1956

0 COMBINED ARMS ARMIES
 0 RIFLE CORPS
 0 RIFLE DIVISIONS (13,300-77)
 0 MECHANIZED DIVISION (13,400-269)

1958-1962

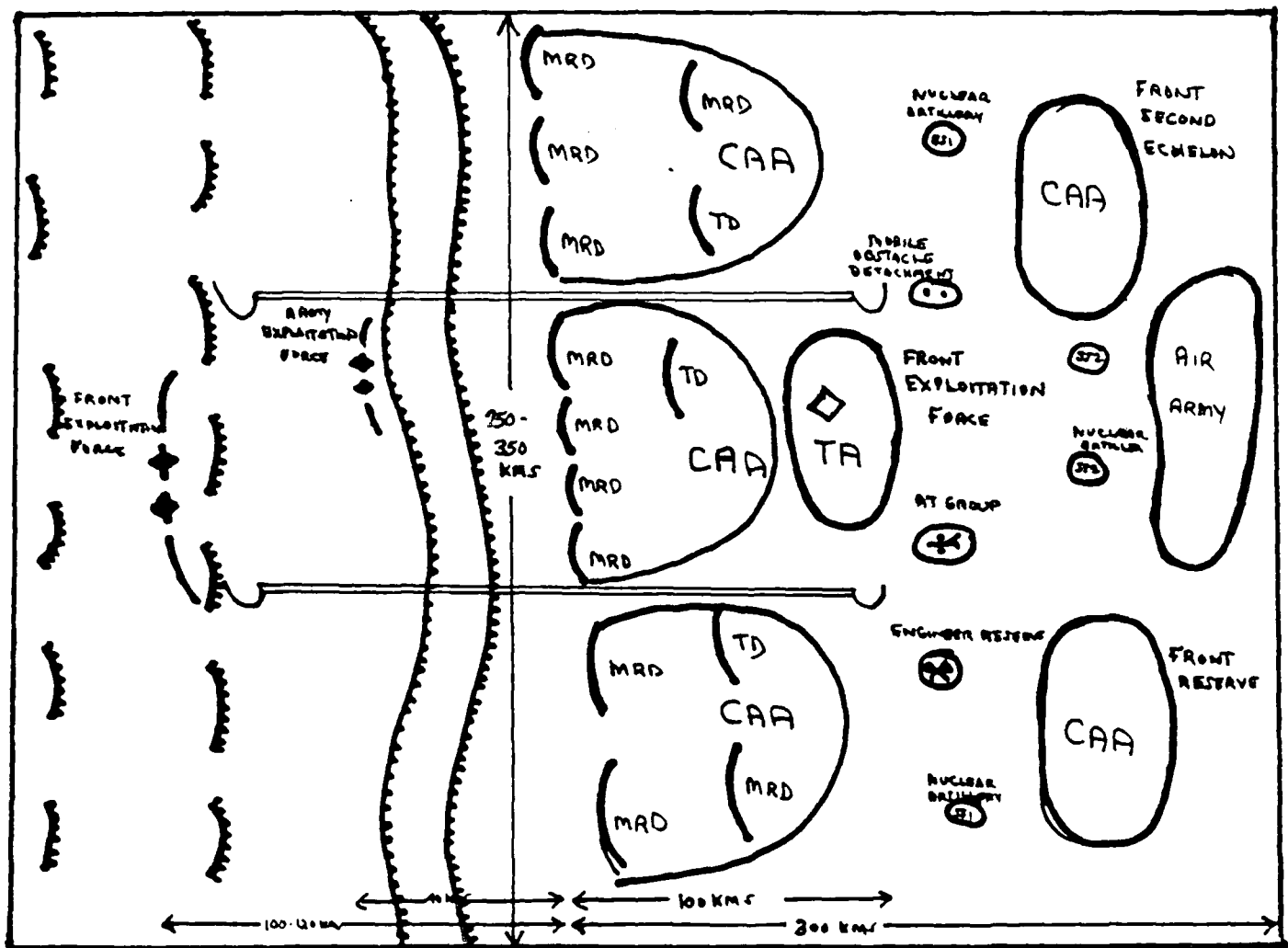
0 COMBINED ARMS ARMIES
 0 MOTORIZED RIFLE DIVISIONS (13,700-220)
 0 TANK DIVISION (10,900-350)
 0 MECHANIZED DIVISION (13,400-269)
 0 TANK ARMIES
 0 MECHANIZED ARMY
 0 MECHANIZED DIVISIONS
 0 TANK DIVISIONS (13,700-426)
 0 AIRBORNE DIVISIONS/BRIGADES
 0 AIRBORNE DIVISION (7,000)

divisions, and the new tank army consisted exclusively of tank divisions.* The important point doctrinally was that while the Soviets recognized the importance of nuclear weapons and tailored their forces accordingly they also recognized that nuclear weapons were still but one type weapon on the modern battlefield. The Soviets assumed that a large conventional capability was still necessary. Hence, their motorized rifle divisions and tank divisions were still a rather potent force in terms of the total number of divisions in the force structure (175-180) and the strength of each division.

The combat use of those new forces from 1958 to roughly 1962 still resembled the patterns of earlier years (figure 10). Within the front operational formation, combined arms armies would conduct the basic offensive penetration operation, if in fact the penetration of an enemy defense was required. Within each combined arms army, motorized rifle divisions effected the penetration; and tank divisions were designated to conduct initial operational maneuver by beginning the exploitation into the operational depth of the enemy defense. At the front level the tank army performed roughly the same function of deep exploitation that the older and larger mechanized army had performed in previous years. However, the Soviet term podvizhny grup (mobile group), which they had used to describe those forces which conducted operational maneuver, went out of use after 1956 primarily because the term was meaningless and superfluous since all forces were now mobile. The important point was that while the terminology was dropped the function of those units was not. They were still considered exploitation forces, therefore forces designed to be assigned a mission of conducting operational maneuver.

*The combined arms army usually consisted of three to four motorized rifle divisions and one tank division while the tank army contained three to four tank divisions.

FRONT OPERATIONAL FORMATION 1958-1962

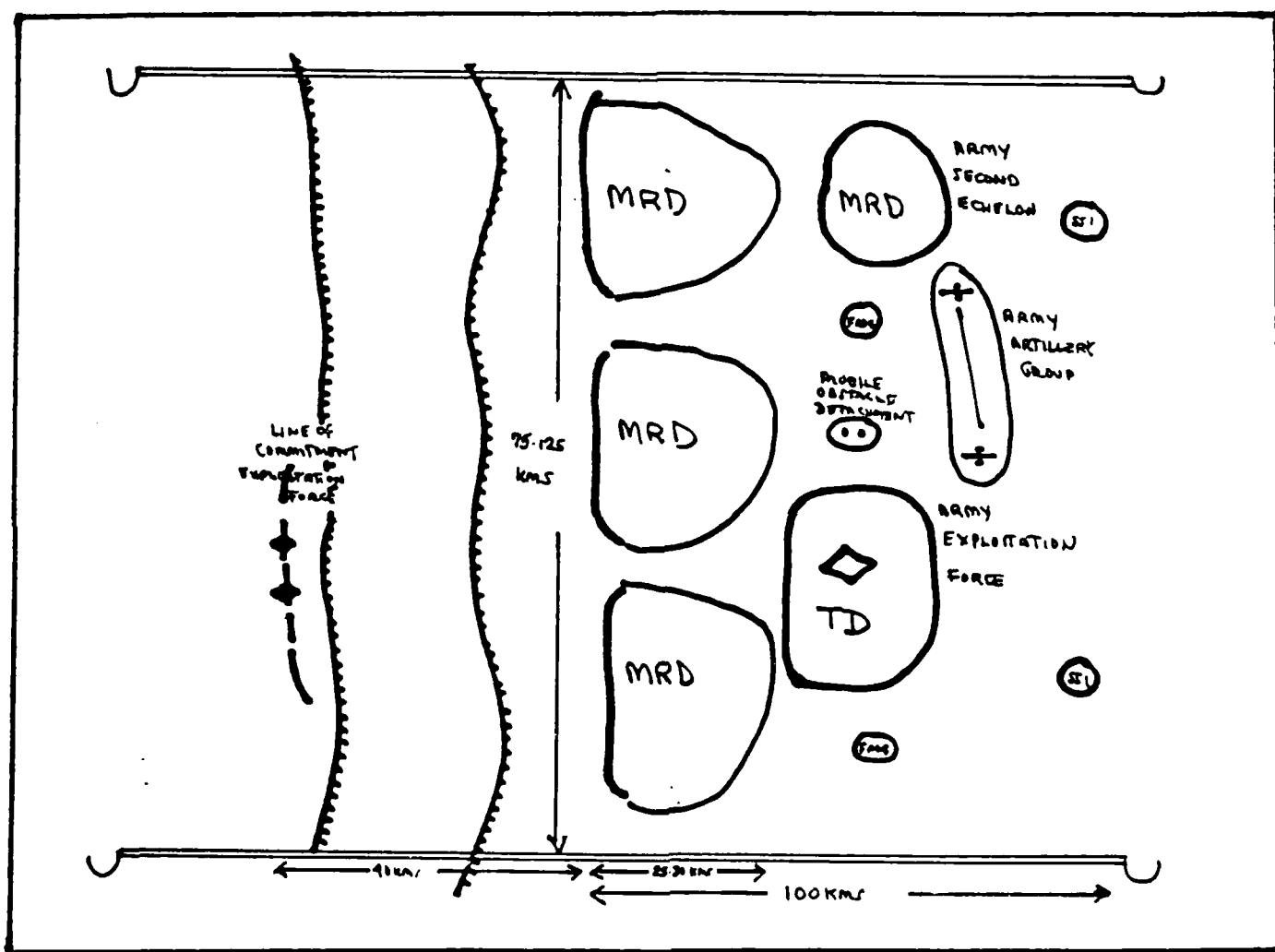


IMMEDIATE MISSION - 150-270 KMS

SUBSEQUENT MISSION - 400-550 KMS

Within the army operational formation from 1958 to 1962 a similar effect was apparent (figure 11). The main element tasked with conducting operational maneuver - the tank division of the army - was committed in much the same fashion as its predecessor tank and mechanized corps had been committed during World War II and the tank or the mechanized divisions had been committed in the immediate post-war years.

ARMY OPERATIONAL FORMATION - 1958-1962



IMMEDIATE MISSION - 70 kms

SUBSEQUENT MISSION - 270 kms

The Revolution in Military Affairs

A major change, however, did occur after 1960, a change that had a marked effect on the Soviet military force structure and Soviet military doctrine for a period of roughly eight years from the early 1960s to the mid- and late 1960s. This change in force structure and doctrine after 1960 was driven in part by political considerations and in part by military necessity. During that year Khrushchev and other political and military leaders decided to accept the fact that a "revolution" had occurred in military affairs. Marshal Sokolovsky articulated what the revolution of military affairs meant in his book Strategiya (Strategy) that appeared in 1962 and in subsequent editions.

In brief, Soviet acknowledgement of the existence of a revolution in military affairs reflected their belief that general war in the future would, in fact, be primarily nuclear. The net effect of that decision was the creation during this period of the Soviet strategic rocket forces and the elevation of that force to preeminent military status. Simultaneously the Soviets relegated the ground forces to a lower status and devoted less concern to the field of operational art. There were other manifestations of this recognition of the revolution in military affairs as well. The size of the Soviet ground force structure decreased from the level of 180 divisions in 1960 to roughly 140 divisions by 1968. The size of Soviet ground force formations including divisions, armies, and fronts decreased; the amount of conventional firepower in those units decreased; and the focus of Soviet doctrinal writings during this period of 1960 to 1968 shifted markedly away from operational concerns.

The Soviet force structure in 1968 contrasted sharply with that of 1958 and clearly reflected the impact of the revolution of military affairs

(figure 12). The most striking change occurred by virtue of the marked truncation in the size of the motorized rifle division from a strength of in excess of 13,000 men in 1958 to a strength of somewhat less than 11,000 men by 1968. There was a similar although not so great reduction in the strength of the tank division. After 1960 there was also a tendency for the Soviets to create smaller, more compact tank armies. In essence, the Soviet force structure of the early and mid-1960s was a force structure that was much more austere, much more tailored to conduct battle and survive in nuclear battle, and clearly of secondary import on the nuclear battlefield to nuclear weapons.

After 1960 Soviet operational formations also changed significantly. At the highest level the front consisted of three or four combined armies and a tank army (figure 13). There was greater force dispersion across the front and greater dispersion of forces in the depths of the formation. At the front level, and at the army level as well, there was a tendency to rely on tank forces to lead the attack at every command level based on the premise that tank forces were more survivable in a nuclear environment, and a rapid advance was necessary. Moreover, within the front there was no specific force entity assigned the specific mission or function of performing operational maneuver. In essence, these forces of the sixties were designated to clean up or tidy up the nuclear battlefield. Within the army operational formation the same effect was apparent: greater dispersion of forces for protection's sake; greater depth of operations; lack of a distinctive force tasked with performing the function of operational maneuver; and a greater use of tank forces wherever possible in the first echelon (figure 14). This was the general tendency in the Soviet force structure and in Soviet military doctrine throughout the mid-1960s.

SUVIET ARMY FORCE STRUCTURE

1968

0 COMBINED ARMS ARMIES
 0 MOTORIZED RIFLE DIVISIONS
 (10,500-188)
 0 TANK DIVISION (9,000-316)

0 TANK ARMIES
 0 TANK DIVISIONS
 0 AIRBORNE DIVISIONS (7,000)

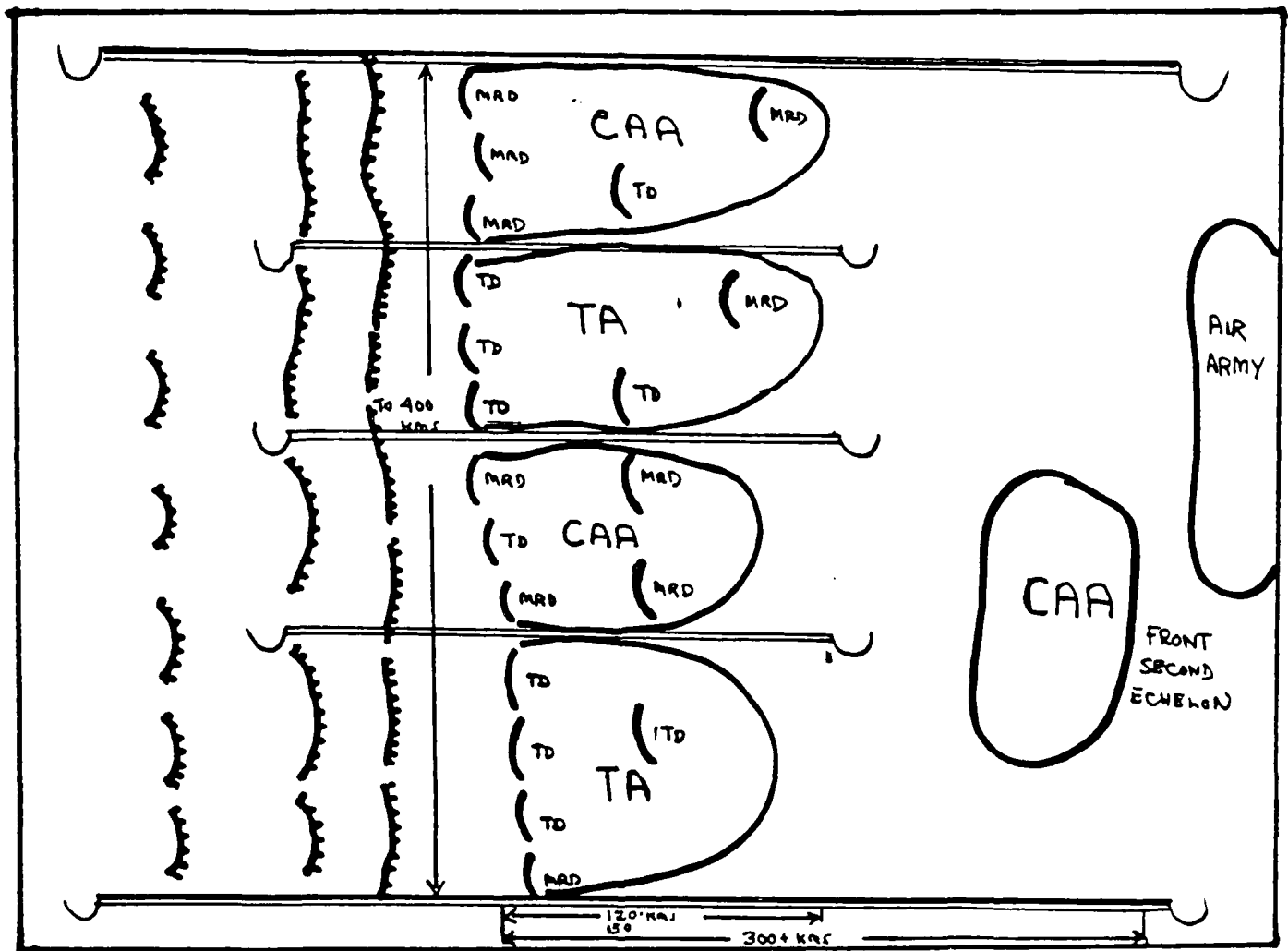
1984

0 COMBINED ARMS ARMIES
 0 MOTORIZED RIFLE DIVISIONS (13,000-265)
 0 TANK DIVISION (9,700-322)

0 TANK ARMIES
 0 TANK DIVISIONS
 0 MOTORIZED RIFLE DIVISION
 0 SEPARATE TANK/MECHANIZED CORPS*
 (12,000-200)
 0 AIRBORNE DIVISIONS (8,500)
 0 AIR ASSAULT BRIGADES (2,000)

* TO PERFORM OPERATIONAL MANEUVER WITHIN
 FRONTS AND ARMIES, SEPARATELY, OR GROUPED
 AS SMALL TANK ARMIES.

FRONT OPERATIONAL FORMATION 1968

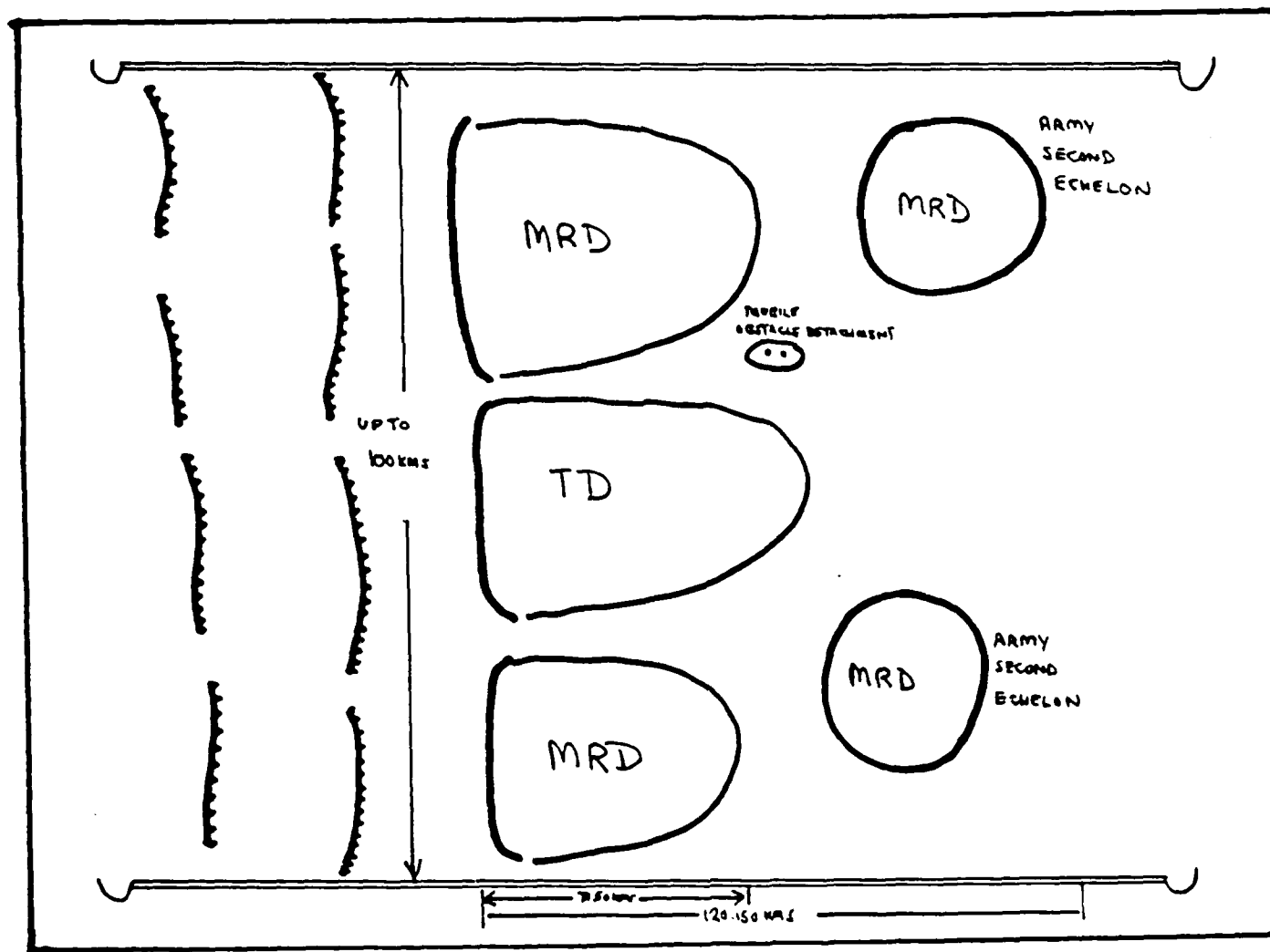


IMMEDIATE MISSION - 300 kms

FINAL MISSION - 300 kms

ARMY OPERATIONAL FORMATION

1968



IMMEDIATE ACTION - UP TO 100 KMS

SUBSEQUENT ACTION - UP TO 300 KMS

Reassessment of the Revolution in Military Affairs

By the late 1960s, however, the situation slowly began to change. Those changes were evidenced by a whole host of indicators. Simply put, from the late 1960s on into the 1970s the Soviets began to look again at the subject of operational art to a much greater degree than they had in the previous several years. This indicated a growing Soviet belief in the possibility and even likelihood that war could be conventional rather than inevitably nuclear. That shift was evident in theoretical works where the sole concern with nuclear operations began to erode. At first the Soviets began to qualify their description of war being nuclear by adding the phrase "however we recognize the possibility of conventional operations." In time the "however" clause became larger and more elaborate. Finally the Soviets reached a point where conventional operations received as much attention, if not more, in these doctrinal works than nuclear operations. You could also note the clear shift in Soviet emphasis through their investigation of their own World War II experiences. This shift was evidenced by a tremendous outpouring of investigative work in the late 1960s that mushroomed into even more extensive investigations in the 1970s concerning virtually every aspect of the conduct of operational maneuver as well as a wide range of other operational topics.

In addition to changes in the theoretical and practical realm, changes were apparent also in the Soviet force structure (figure 15). By 1984 virtually every entity in the Soviet force structure had become more balanced in terms of combined arms capability. Motorized rifle divisions were added to tank armies; and the size, strength, and number of the motorized rifle divisions rebounded to where it had been in 1958. A similar effect was noticeable in the tank division

SOVIET ARMY FORCE STRUCTURE

1968

0 COMBINED ARMS ARMIES
 0 MOTORIZED RIFLE DIVISIONS
 (10,500-188)
 0 TANK DIVISION (9,000-316)

0 TANK ARMIES
 0 TANK DIVISIONS

0 AIRBORNE DIVISIONS (7,000)

1984

0 COMBINED ARMS ARMIES
 0 MOTORIZED RIFLE DIVISIONS (13,000-265)
 0 TANK DIVISION (9,700-322)

0 TANK ARMIES
 0 TANK DIVISIONS
 0 MOTORIZED RIFLE DIVISION

0 SEPARATE TANK/MÉCHANIZED CORPS*
 (12,000-200)

0 AIRBORNE DIVISIONS (8,500)

0 AIR ASSAULT BRIGADES (2,000)

* TO PERFORM OPERATIONAL MANEUVER WITHIN
 FRONTS AND ARMIES, SEPARATELY, OR GROUPED
 AS SMALL TANK ARMIES.

and in the structure of the army and the front. The additions represented a clear reemphasis on the development of the sort of forces necessary to conduct successfully conventional ground operations and operational maneuver. Moreover, Soviet concern for and study about mobile corps and army operations in World War II indicates that in future wars, in fact in peacetime, they may in fact field tank and mechanized corps designed to perform the same function those units had been accustomed to performing in earlier years, the function of operational maneuver.

How then would this new force structure be used in a contemporary conflict? Obviously, the Soviets do not have single simple solutions to their offensive problems, for there exist (and have always existed) a range of situations in which they would use their forces. Our tendency has been, and is still, to stereotype the way in which the Soviets conduct offensives without regard to terrain, the nature of the defense, the nature of the theater of operations, or the circumstances of the conflict. Thus, I will focus on how the Soviets are likely to organize their forces in order to conduct offensive operations in three widely varying circumstances: against a heavy, prepared defense; against what might be called a partially prepared defense; and against a virtually unprepared defense. Clearly the Soviets would prefer to attack the latter rather than the former. Virtually every indicator contained within Soviet written theoretical works and, in particular, within those which deal with what the Soviets call "the beginning period of war" (nachalnyi period voyna) indicates their firm belief that in preparing for modern war it would be folly to engage in the classic type of slow mobilization which preceded previous wars. Moreover, these works categorically renounce the practice of conducting the classic type set piece battle with forces arrayed in deep, patterned formations. Succinctly put, the Soviets have renounced what they call the "gnawing through

of the defense" simply because, in a potential nuclear war, that method would be indeed a suicidal type of offensive to launch. Hence, they would prefer going against an unprepared or partially prepared defense even at a cost of little or no advanced force mobilization.

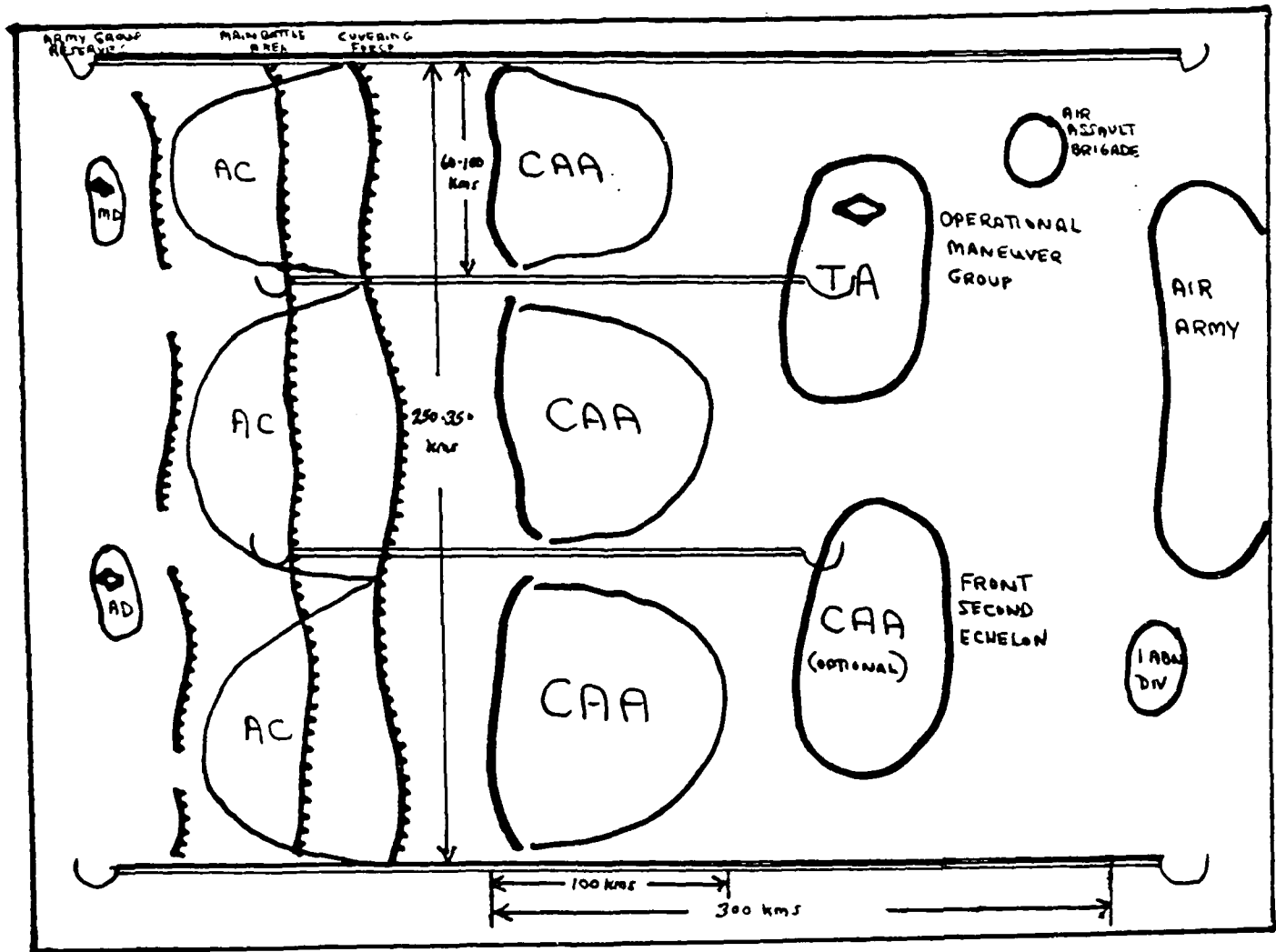
How then would the Soviets conduct operations in each of these three circumstances. First, regarding a front operational formation arrayed against a fully prepared defense the tendency would be for the Soviets to array their forces more deeply than they would normally prefer (figure 16). In this case the Soviets are likely to form the front in a two echelon configuration. The most important element of this two echelon formation, however, will be the operational maneuver group (the group designated to perform operational maneuver). At front level it is clear that the modern tank army would perform the same function as the old mobile group performed, the function of operational maneuver. The tank army would do so in tandem with new elements within the force structure of the front, specifically the air assault brigade, and perhaps also in tandem with older elements within the front such as the airborne division. Thus the Soviets have added a new vertical dimension to their operational maneuver concepts. This vertical dimension may expand in the future.*

Within the army operational formation in a situation of an attack against a prepared defense the Soviets will also tend to echelon forces a bit more deeply than they would prefer in order to protect forces from the effects of a potential nuclear exchange (figure 17). In this case the army commander would possess either a tank division or a tank corps specifically designated to perform the function of operational maneuver. At army level there would also exist a vertical dimension of maneuver performed by a helicopter borne motorized rifle battalion.

*Perhaps through creation of an air assault corps at front level and an air assault brigade at army level.

FRONT OPERATIONAL FORMATION 1984

AGAINST A FULLY PREPARED DEFENSE

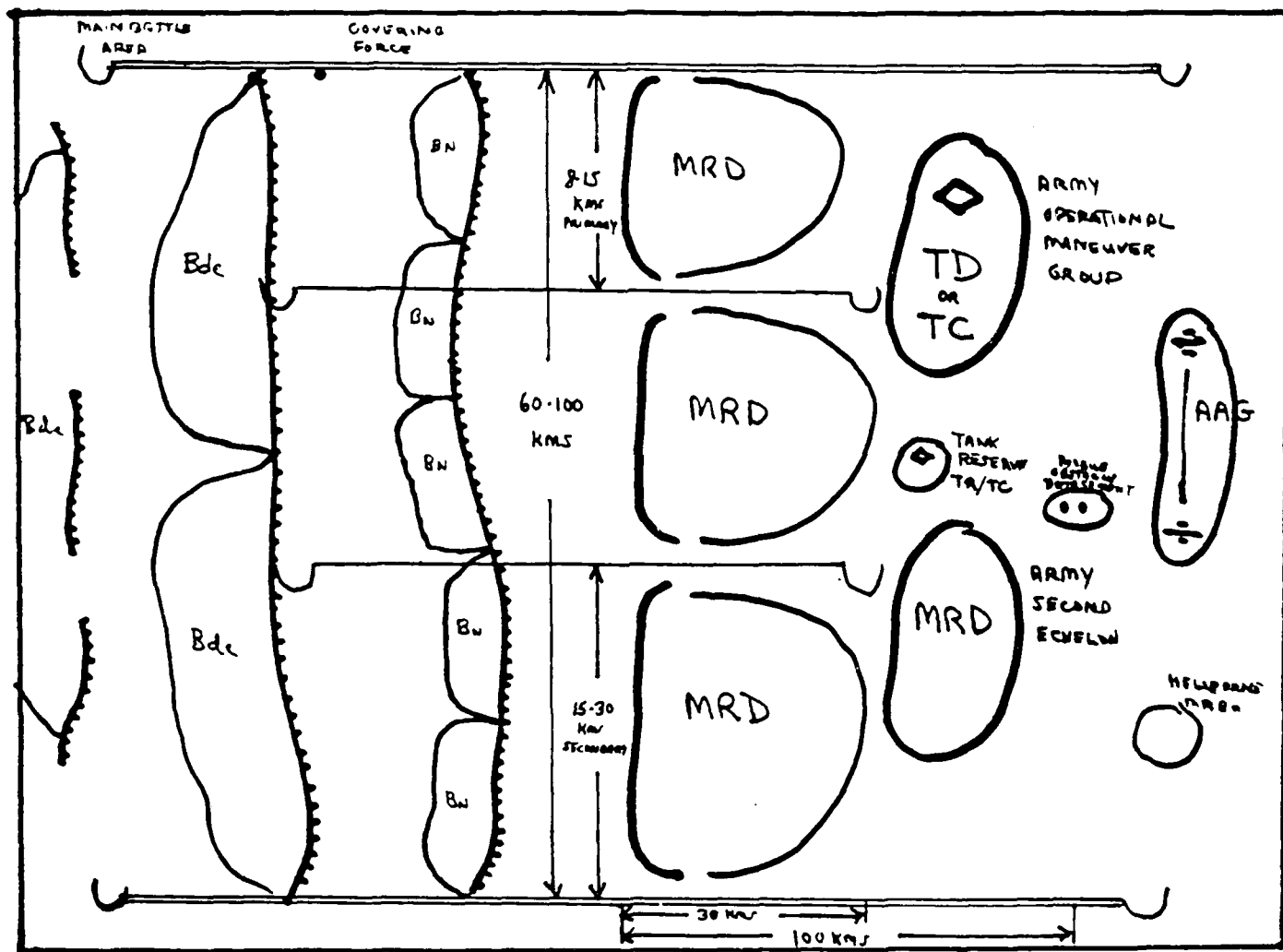


IMMEDIATE MISSION - 250 km

FINAL MISSION - 600 km

ARMY OPERATIONAL FORMATION 1984

AGAINST A FULLY PREPARED DEFENSE



IMMEDIATE MISSION - 100 KMS

SUBSEQUENT MISSION - 250 KMS

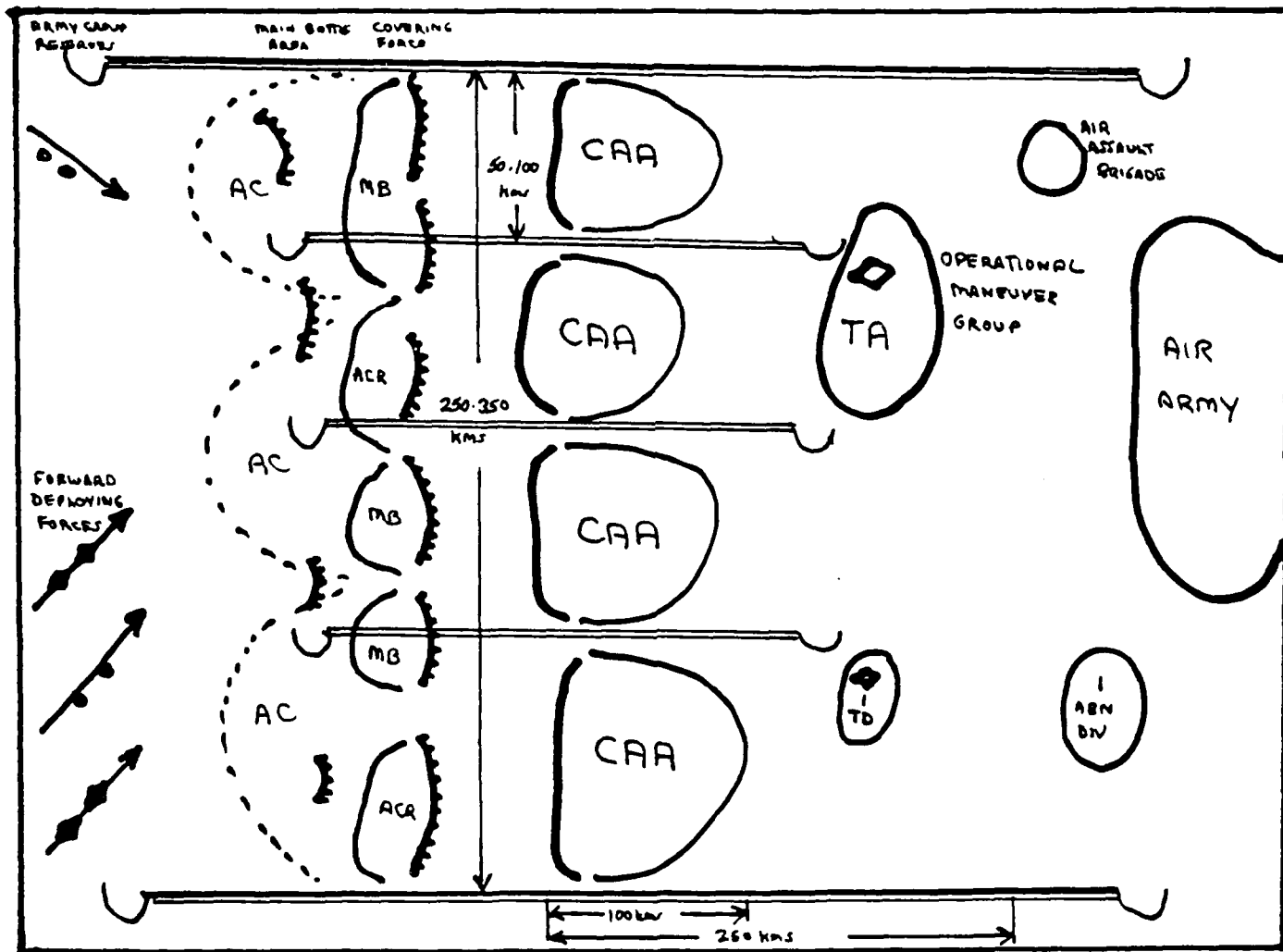
Against a partially prepared defense the Soviets, acting upon their experiences in Manchuria and elsewhere, would attempt to deploy their forces as far forward as possible in order to establish great initial attack momentum quickly and to deny the enemy inviting targets in the Soviet rear area (figure 18). Additionally, the Soviets believe that it is and will be only prudent to develop operational techniques that would deny the enemy the ability, or at least make it difficult for him, to respond with nuclear weapons, even if he wished to. At the front level against a partially prepared defense the tank army would perform the task of conducting operational maneuver. The Soviets would deploy the tank army as far forward as practicable, and they would commit it to action as early as possible, again based on the assumption that one must propel one's forces forward as rapidly as possible in order to decrease the vulnerability of those forces to nuclear attack and to paralyze the enemy's command and control system.

The same principles will apply to the army's operational formation when engaging a partially prepared defense (figure 19). At army level a new element appears within the operational formation, one which we do not recognize very often today, but one which the Soviets have written about as much as they have about the mobile group (operational maneuver group). The Soviets call that element the forward detachment (peredovoi otryad). The army will form for combat operationally with the bulk of its forces forward. It will have an operational maneuver group in the form of a tank division or a tank corps, and that force will probably also deploy as far forward as possible to capitalize on offensive successes as quickly as possible.

Operations by the army and by the operational maneuver group probably will be led by a forward detachment. The Soviets are prepared to use forward detachments against both partially prepared defenses or unprepared defenses at both

FRONT OPERATIONAL FORMATION - 1984

AGAINST A PARTIALLY PREPARED DEFENSE

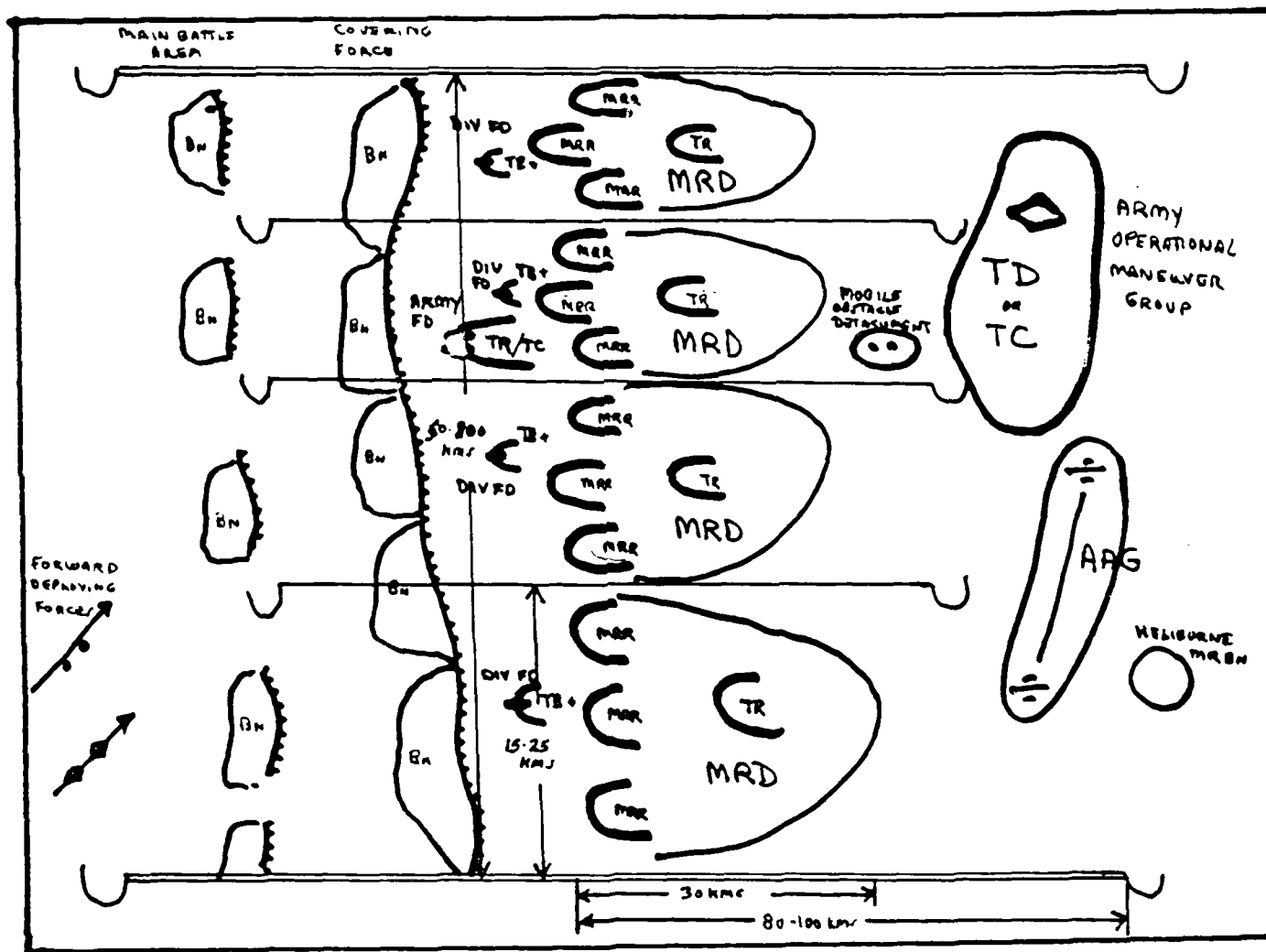


IMMEDIATE MISSION - 300 km

FINAL MISSION - 700 km

ARMY OPERATIONAL FORMATION 1984

AGAINST A PARTIALLY PREPARED DEFENSE



IMMEDIATE MISSION - 120 KM
SUBSEQUENT MISSION - 300 KM

army and division level. They used forward detachments rather extensively during World War II, and their doctrinal writings continue to accord them an important role at both the tactical and operational level. The forward detachment differs from that element that we normally confuse it with, the avant garde or the advanced guard, in that the advanced guard is primarily a security element whereas the forward detachment is an element which has a distinct operational or tactical function: namely to preempt or disrupt the defense; to disrupt enemy deployments; and to facilitate the advance of the main force. The two most important functions are preemption or disruption of partially prepared or unprepared defenses.

In wartime it is likely that Soviet armies will employ forward detachments. Classically that army forward detachment has been of tank corps strength, roughly 250 tanks; and I would expect that forward detachment to be of the same size today, only tailored to the situation which it faces. Its mission would be to lead the army attack along the most critical axis in the army offensive sector, to drive its attack to as great a depth as it can but certainly well into the enemy defenses (or where those defenses would be were they in fact in place), and to disrupt or preempt those defenses.* Likewise, each of the army's motorized rifle divisions would also have a forward detachment. In the latter stages of World War II most rifle divisions or rifle corps used a full task organized tank brigade (or reinforced tank battalion) to perform that function; and in virtually every operation, whether it be pursuit, meeting engagement, or exploitation, after the penetration operation the rifle division led its operations with that tank heavy forward detachment. Today I would expect the Soviets to do likewise in an attack against a partially prepared defense or against an unprepared defense.

*An army forward detachment would attack to a depth of from 40 to 80 kilometers, that is completely through the entire depth of the enemy's tactical defenses.

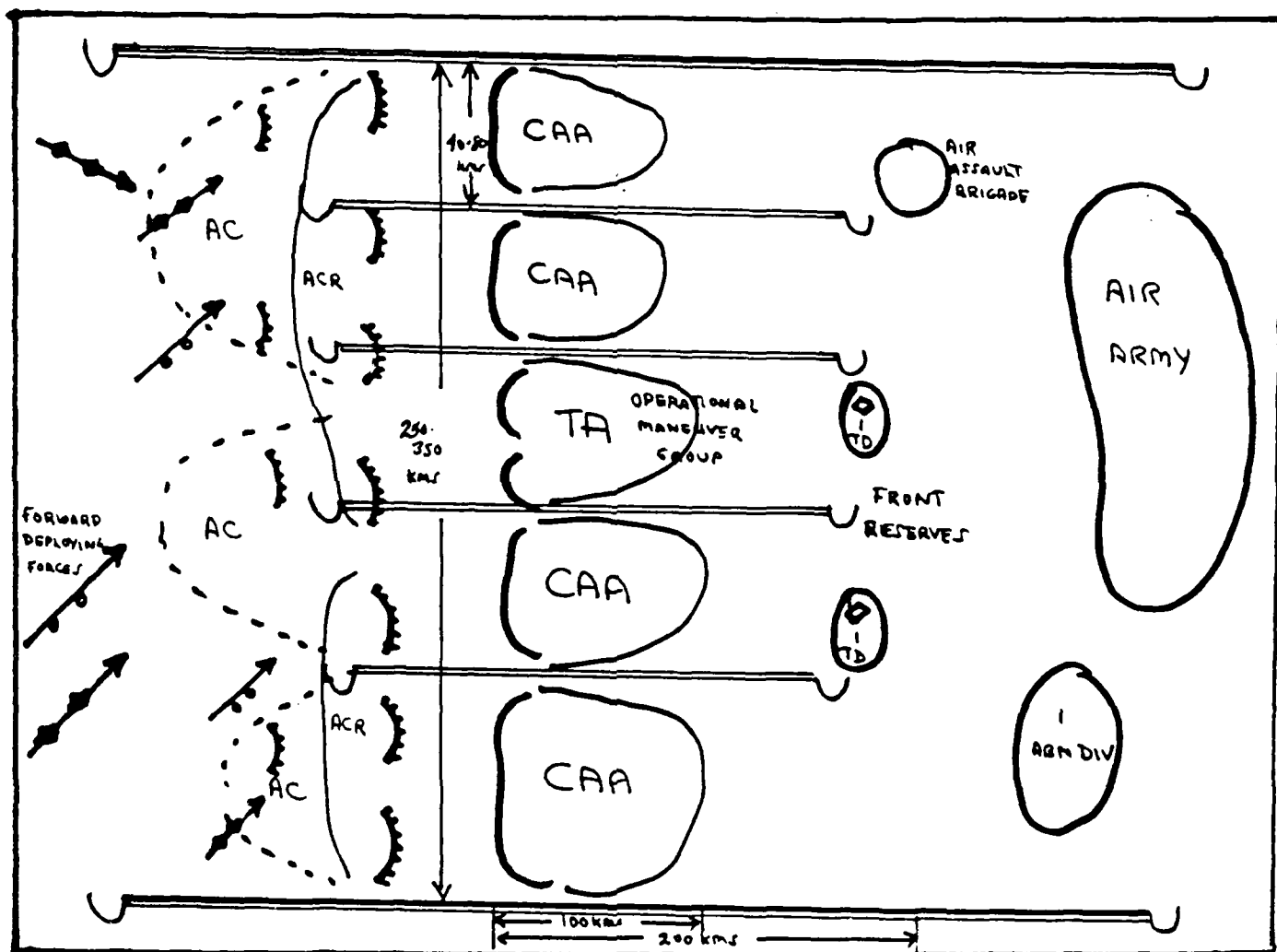
The primary mission of the division's forward detachment is to disrupt or preempt the enemy defense by getting into the enemy defense, by occupying a portion of it, or by preventing it from becoming a coherent defense.* It is likely also that a heliborne motorized rifle battalion within the combined arms army (or tank army) would have the designated mission to act as the vertical element of either the army's forward detachment or a key motorized rifle division's forward detachment. In general terms, as a defense become more coherent, there is less likelihood of the Soviets leading their operations with forward detachments. In essence, the forward detachment performs the same sort of function that the awl performs in carpentry work. It paves or eases the way for the screw or nail to be inserted into the wood. These forward detachments are indeed awls to be followed by main forces and by operational maneuver groups.

The offensive situation that the Soviets would prefer to face is an attack against an unprepared defense. I define an unprepared defense as a defense that has had time to erect part of its covering force but no more. Hence, operations in such circumstances would take the form of an extended meeting engagement, perhaps accounting for the increased and intense Soviet study of and practice in conducting meeting engagements. The front operational formation in the circumstance of an attack against an unprepared defense would probably be single echelon and would probably involve commitment of the front's tank army to lead the front attack (figure 20). This configuration represents the ultimate Soviet attempt to preempt enemy defenses initially, avoid the use of nuclear weapons, and win quick, decisive victory. Being prudent people the Soviets would probably keep some tank forces in reserve.

*A division forward detachment would attack to a depth of from 20 to 40 kilometers that is beyond an enemy's covering force and well into the tactical defenses, although perhaps not entirely through these defenses.

FRONT OPERATIONAL FORMATION - 1984

AGAINST AN UNPREPARED DEFENSE

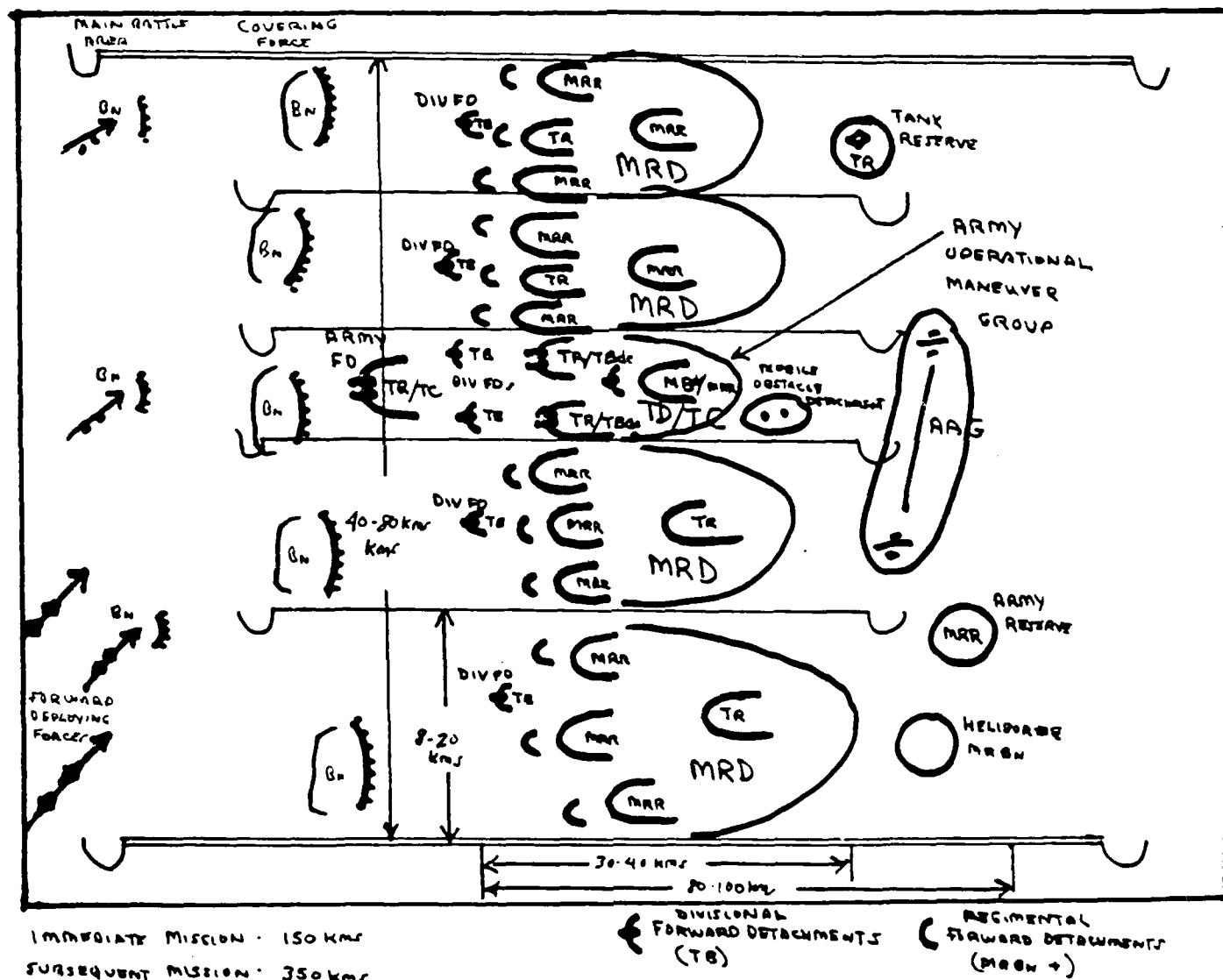


IMMEDIATE MISSION - 350 km
FINAL MISSION - 800 km

The army operational formation deployed against an unprepared defense would display similar features (figure 21). Most noticeable would be the predominance of and the reliance upon forward detachments to lead the attack: forward detachments at army level in the form of a reinforced tank regiment or tank corps; forward detachments at division level in the form of reinforced tank brigades or battalions; and forward detachments of motorized rifle regiments in the form of reinforced motorized rifle battalions. In this offensive configuration main Soviet forces would be preceded by a virtual wave of forward detachments advancing on separate axes all with the primary aim of preempting or disrupting the defense before it gels. These forward detachments would pave the way for the operations of Soviet main force units and of deeper operating forces, the tank division or tank corps of the army and the tank army of the front. The forward detachments and the operational maneuver groups can create and impart tremendous momentum to the attack and permit it to advance to even greater depths than in earlier periods.

ARMY OPERATIONAL FORMATION 1984

AGAINST AN UNPREPARED DEFENSE



Indices of Operational Maneuver

Mobile (Operational Maneuver) Group Size

Although the Soviets had determined in the 1930's that operational maneuver forces were critical for offensive success, it took years for the Soviets to determine what size force should perform that function and at what level. Since in the 1930's the Soviets considered fronts to be strategic formations and armies to be operational, the Soviets placed their mechanized corps singly in subordination to armies (usually shock armies) or grouped under control of front. The four mechanized corps of about 500 tanks each would operate as a part of or in support of shock armies on the most important operational directions. Soviet use of two mechanized corps in Poland in 1939 was a pale reflection of this concept.

At the outbreak of war in June 1941 the larger Soviet mechanized corps (1,000 tanks each) were designated to conduct operational maneuver for both front (in the form of a cavalry-mechanized group of cavalry and mechanized corps or a mobile group of one to two mechanized corps) and for army (an echelon to develop success of one mechanized corps). The events of 1941 rendered this concept inoperable because of the German destruction of the Soviet armored force and the Soviet inability to command and control the large mechanized force effectively. However, in theory the concept of the mobile group remained a valid one. The consequences of lacking such a force became apparent from the results of operations in late 1941 and early 1942.

Thus in early 1942 the Soviets began rebuilding their armored force. One facet of that rebuilding program was to determine the proper size of mobile groups and the appropriate level for their employment. Early experimentation with tank corps, tank armies, and mechanized corps of varying sizes produced by

mid-1943 general agreement that a tank or mechanized corps of over 200 tanks was required to fulfill the role of mobile group at army level while a tank army of at least 500 tanks should perform the same function at front level.* Further study during the last 2 years of war confirmed that a tank or mechanized corps was suited for operations at army level, but at front level use of two tank armies was desirable. Moreover the Soviets concluded, based on experience, that the strength of the mobile corps should be about 250 tanks and self-propelled guns and that of the tank army should be about 1,000 tanks and self-propelled guns. By war's end all mobile units had improved motorized rifle (infantry) support, in particular the tank army (for example, 6th Guards Tank Army in Manchuria).

These changes of the later war years became the basis for Soviet structuring of armored and mechanized forces in the immediate postwar years. The postwar tank and mechanized divisions, successors of the wartime tank and mechanized corps, contained increased armored strength (about 340 tanks and self-propelled guns per tank division and 260 tanks and self-propelled guns per mechanized division) and were better balanced in terms of infantry support. The new postwar mechanized armies (converted from tank armies) were balanced forces of two tank and two mechanized divisions numbering about 1,000 tanks and self-propelled guns. The tank and mechanized divisions performed the function of operational maneuver within the combined arms army (and rifle corps as well), and the mechanized army did likewise at front level, usually on the basis of two mechanized armies per front. Throughout the first postwar period (1945-1950) the strength of these operational maneuver forces tended to increase.

*These strengths were based on a thorough analysis of tank corps experiences which showed tank attrition to be high (40-60% per operation). That rate of attrition steadily declined throughout the war, to an average of about 15-20% in 1945.

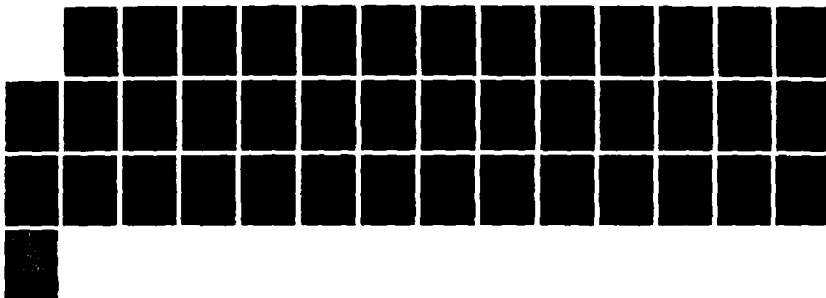
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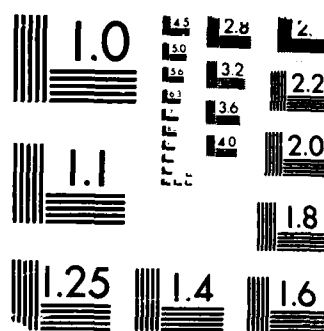
DEEP ATTACK: THE SOVIET CONDUCT OF OPERATIONAL MANEUVER 2/2
(U) ARMY COMBINED ARMS CENTER FORT LEAVENWORTH KS
SOVIET ARMY STUDIES OFFICE D M GLANTZ APR 87

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NL





MICROCOPY RESOLUTION TEST CHART
 (NBS 1963-A)

The restructuring of forces during the Zhukov years (after 1954) represented the first step in the process of creating a force capable of fighting in a nuclear context. During this period the tank division evolved into a more tank-pure entity of about 420 tanks and self-propelled guns. The tank division was still tasked with the mission of conducting operational maneuver within the combined arms army. The new tank army, which replaced the more cumbersome mechanized army, numbered about 1,500 tanks and self-propelled guns and performed the operational maneuver mission for the front, although now on the basis of one tank army per front. These armored forces were heavier in tank strength than their predecessors but weaker in terms of motorized rifle strength. The Soviets compensated for this weakness in motorized infantry within armored units by creating more numerous motorized rifle divisions for use in combined arms armies. These new motorized rifle divisions replaced the older mechanized and rifle divisions. The tendency to create more armor-pure units became more pronounced in the 1960's as the Soviets adopted a force structure geared primarily to the conduct of operations in only a nuclear context.

After 1960, during the initial stages of the "revolution in military affairs," the Soviets adjusted their force structure to one capable of "cleaning up" a nuclear battlefield. This new emphasis placed a premium on the use of armored units because of their presumed improved survivability capability in a nuclear war and deemphasized the necessity for conducting focused operational maneuver. To further improve the speed and survivability of armored forces, the Soviets reduced the strength of the tank division to about 330 tanks and the tank army to a strength of from 1,000 to 1,300 tanks. Motorized rifle strength within these armored units remained low. The tendency to employ these armored forces in front and army first echelon also blurred the necessity for conducting operational maneuver.

The Soviet shift in emphasis from nuclear war to conventional war (albeit in a nuclear scared posture) so evident in the 1970's has prompted renewed Soviet investigation of the optimum size and configuration of operational maneuver forces. This shift has become obvious from changes which have occurred within the Soviet force structure.

Returning to the pattern of pre-1960, the current tank division has a strength of 325 tanks and a significant and growing motorized rifle strength. The tank army with a strength of between 1,300 and 1,500 tanks has also improved in strength and balance. With the renewed Soviet emphasis on the subject of operational maneuver, it is likely that they will again use tailored forces to conduct such maneuver at both army and front level. At army level the tailored tank division (probably redesignated as a tank corps in line with traditional practice) with a strength of at least 250 tanks will perform the function of operational maneuver. At front level it is likely the Soviets will use two tank armies to perform the same function. Because of the increased probability that future war will be conventional, or fought in the context of nuclear uncertainty, new importance is attached to the question of how these forces are configured and employed when fulfilling their mission of conducting operational maneuver.

Mobile (Operational Maneuver) Group Operational Formation

One of the most critical aspects of mobile group operations has been and will continue to be how that force is organized for combat, in particular its formation when employed in the role of exploitation.* That organization dictates how successfully that unit will operate and survive in combat.

*Exploitation used as a synonym for operational maneuver.

Consequently few areas have received as much attention from Soviet military theorists.

Serious consideration of the operational formation of tank and mechanized corps and tank armies began after November 1942 and intensified in the later war years. The experiences of November 1942 to January 1943 indicated that tank and mechanized corps were best committed to combat (vvod v proryv--introduced into the penetration) in two echelon column formation with the tank brigades of each tank corps preceding the corps' motorized rifle brigade (with either two or three tank brigades forward advancing along two to four march routes) and mechanized brigades, with tank regiments in advance, leading the attack of each mechanized corps. The first Soviet tank armies (of ad hoc composition), formed in 1942, usually commenced operations with assaults on enemy tactical defenses by their first echelon rifle divisions and separate tank brigades. Once those enemy tactical defenses were penetrated (partially or totally) the tank army's tank corps (usually two) advanced into combat in two echelon configuration in order to complete the tactical penetration and commence the operational exploitation.

During the summer of 1943 the new single TOE tank armies of three corps composition conducted operations in two echelons. The army's two tank corps led the attack (marching in multiple brigade columns along four routes of advance) and were followed by the tank army's mechanized corps. Tank armies with only two corps usually operated in single echelon with the corps advancing abreast. Examples of tank army and mobile corps operational formations are found in Appendices 1-3.

An important element of the tank army and mobile corps operational formation which evolved during wartime was the forward detachment (peredovoi otryad). Initially viewed as a type of advanced guard with a distinct reconnaissance

function, over time the forward detachment, particularly at corps level, took on the tactical function of preempting or disrupting enemy defenses in the operational depths. As its function and importance expanded, so did the size and number of such forward detachments. At Stalingrad the 26th Tank Corps of 5th Tank Army employed two reinforced motorized rifle companies as an army forward detachment. This detachment actually effected the initial linkup that resulted in the encirclement of German 6th Army.

Throughout 1943 the forward detachments of tank corps grew from a single tank battalion to a full tank brigade. In the ensuing years the tank corps reinforced the tank brigade-size forward detachment with a wide array of supporting units, including assault guns; antitank artillery; antiaircraft artillery; and engineers. By 1945 such attachments to the tank brigades had become routine. The mechanized corps also slowly increased the size of its forward detachment from a separate tank regiment in late 1942 to a full tank or mechanized brigade by war's end. Thus by 1945 the tank army's advance was led by at least two reinforced brigade-size forward detachments from its first echelon corps. While exploiting into the operational depths tank armies often used a third forward detachment deployed from its third mobile corps. So successful were the forward detachments in achieving and maintaining offensive momentum that their use was expanded to include leading the advance of rifle force as well.*

Postwar Soviet practices reflected the lessons learned from their wartime experience with the operational formation of mobile units. The postwar mechanized army normally formed for combat in two echelons with its two tank divisions forward and its mechanized divisions in second echelon. Likewise the tank

*A reinforced tank brigade led the advance of rifle corps while a reinforced self-propelled artillery battalion often led the advance of rifle divisions.

and mechanized divisions operated in two echelon configuration (the tank division with two or three medium tank regiments forward and the mechanized division with either two or three mechanized regiments forward). Reinforced tank battalions from the lead tank or mechanized regiments served as division forward detachments.

After the Zhukov reorganization the new tank army and the tank division continued to operate in two echelon formation. However by the mid-1960's further reorganization occurred, and the tank army and tank division deployed in more dispersed fashion in either first or second echelon of the front or the army. Tank armies and divisions also began operating in either one or two echelons with tank and motorized rifle forces operating along multiple axes across a broader front. The precise formation and composition of forward detachments blurred just as had the function of operational maneuver.

Since the late 1960's the tank army and tank division with their increased armor and motorized rifle strength have operated in one or two echelons depending on the tactical and operational situation. Increased emphasis on the use of these forces to conduct operational maneuver (as distinct operational maneuver groups) has also increased the importance of forward detachments. Within the tank army this function will be performed by a reinforced tank regiment (or corps) and within the tank division by a reinforced tank battalion. Illustrative of this trend toward the reemphasis of operational (and tactical) maneuver, the motorized rifle division will also employ a reinforced tank battalion in the role of divisional forward detachment.

Soviet interest in the role and composition of forward detachments, so evident in published works, is indicative of their continuing investigation of the proper strength and configuration of forward detachments at each level of command.

Mobile (Operational Maneuver) Group Commitment to Combat

Among the key questions posed to Soviet military planners who contemplate the conduct of operational maneuver were those of when, where, and how those maneuver forces should be committed to combat in order to fulfill their function of exploitation. As is the case with the size and configuration of the force, the Soviets, in large part, base their current tactical and operational practices on their broad experiences from the past. Appendices 4 and 5 reveal that past experience, and Appendix 6 shows how the Soviets have built upon that experience in the postwar years.

In general, during the period from early 1942 through early 1943 the Soviets experimented with precise operational and tactical techniques to be used by mobile forces. The older ad hoc tank armies and their component tank corps began their operations early and in sectors whose width turned out to be too great for the effective control and coordination of deep operating forces. Moreover these forces were committed to combat either initially or at a shallow depth into the enemy tactical defenses, a situation which inevitably entangled these units in those defenses and eroded their combat strength considerably even before they began their operational exploitation. Conversely, at times the corps were held back too long and committed long after the optimum time for their effective use (Khar'kov 1942). In general, the ad hoc tank armies advanced to combat on the first day of each operation in sectors 10 to 35 kilometers wide along four to six routes of advance and at a depth of from 1 to 3 kilometers into the enemy defenses. During the same period separate tank and mechanized corps began operations on the first day of the operation in sectors 4 to 14 kilometers wide along two to six routes of advance also at depths of 1 to 3 kilometers into the enemy defenses.

After mid-1943, in order to alleviate the high attrition in armor and produce more positive tactical results, the Soviets adjusted the timing of mobile force commitment to combat, the size of the sector of commitment, and the number of commitment routes. These adjustments plus the Soviet restructuring of mobile forces produced more effective tactical and operational use of those forces. As shown by data in Appendices 4 and 5, from 1943 to 1945 the Soviets committed their mobile forces to combat at a time when they could realistically expect to begin a successful operational exploitation. Depending on the tactical situation, and specifically the depth of the tactical defenses, after 1943 the Soviets committed their tank armies to combat 1 to 4 days after the assault of front rifle forces. Moreover the commitment sector of the tank army decreased to 8 to 14 kilometers through which the tank army advanced along four routes. The depth of tank army commitment varied from 2 to 25 kilometers depending on the day of commitment.

During the same period the indices of tank and mechanized corps employment also changed. The time of tank and mechanized corps commitment to combat varied from day one to day four of the operation depending primarily on the nature of the defenses. However, in the ideal circumstance and in the majority of cases the mobile corps advanced into the penetration on day one or two. Tank corps commitment sectors decreased to 2 to 6 kilometers while the mechanized corps sector decreased to 6 to 12 kilometers.* Depending on the day of commitment the depth of commitment of tank and mechanized corps varied from 2 to 25 kilometers although the average for 1945 was 3 to 10 kilometers, that is the rear portion of the enemy tactical defensive belt.

Drawing upon these wartime experiences the Soviets derived logical new norms for the employment of postwar operational maneuver forces. Inherent in

*Mechanized corps usually had three brigades in first echelon while tank corps had but two.

this process has been the necessity to balance that wartime data against the inevitable changes produced by changing technology, in particular the advent of nuclear weapons.*

Indices of mobile force commitment in the first postwar period (1946-53) reflected closely the experiences of the last year of war. The new mechanized army normally advanced to combat on day two of the operation along four routes of advance through an offensive penetration sector of 8 to 12 kilometers. The army entered combat at a depth of 20 to 25 kilometers into the enemy defenses. Correspondingly, the lead tank divisions of the mechanized army advanced along two routes through a sector of 4 to 6 kilometers followed by the mechanized divisions advancing on a similar or slightly expanded frontage. The mechanized division performing the operational maneuver mission for the rifle corps and combined arms armies advanced along two routes through a sector of 4 to 8 kilometers at a depth of 8 to 10 kilometers into the enemy defenses.**

During and after the Zhukov reforms the indices of operational maneuver doubled thus reflecting the new realities of the nuclear battlefield, in

*An indices of these changes can be derived from Soviet data on the evolving offensive sector of a tank (motorized rifle) battalion which is as follows:

	<u>Width of Sector</u>	<u>Factor</u>	
1945	.5-.7 kilometers	1	
1946-53	.7 kilometers	1	
1954-60	1.5 kilometers	2	
1961-68	2 kilometers	2.85	
1969-Present	2 kilometers - Nuclear	2.85	(By implication a nuclear scared posture would be 1.5 kilometers)
	1.5 kilometers - Nuclear Scared	2	
	1 kilometer - Conventional	1.43	

These indices, when applied to the force structure as a whole, provide a rational basis for explaining changes in offensive sectors throughout the post-war period. Interestingly, these factors also seem to apply roughly to depth of mission, rate of advance, depth of commitment, and depth of defensive belt.

**The Soviets assessed enemy tactical defenses to be roughly 3 to 10 kilometers deep.

particular the necessity for greater dispersion (although this was compensated for by the increased strength of operational maneuver forces) and the increasing depth of enemy tactical defenses (assessed at roughly 10 to 20 kilometers). In accordance with these changes, the new tank army was expected to advance on day two of the operation along four to six routes through a sector 16 to 24 kilometers wide at a depth of 40 to 45 kilometers into the enemy defenses. Its component tank divisions were to advance along two to three routes through a sector 8 to 12 kilometers wide. The tank division of front first echelon combined arms armies, functioning as an operational maneuver force, was to advance in a like sector on day one of the offensive for commitment at a depth of 16 to 20 kilometers into the enemy defenses.

With the full Soviet recognition of the "revolution in military affairs" (1960), the shift in emphasis to combat in a complete nuclear context continued. While operational maneuver lost its importance, tank armies and divisions began operating in a first echelon role at both army and front level as well as in second echelon. Moreover, the internal echelonment of the tank army and tank division became more flexible. Accordingly, the width of operational sectors increased. By the mid-1960's the tank army of the front was to advance to combat on day one or day two of the offensive (depending on its initial deployment) through a sector of 20 to 32 kilometers along four to six routes of advance. The army could be committed to combat at a depth of up to 60 kilometers into the enemy defenses, The tank division of the combined arms army was to commence its advance on the first day of the operation along two routes through a sector of 10 to 16 kilometers. It would enter combat at a depth of up to 30 kilometers into the enemy tactical defenses which by that time were presumed to extend to a depth of up to 40 kilometers.

Soviet reassessment of the single nuclear option in the late-1960's and 1970's resulted in the judgement on their part that alternatives were available to combat in an inevitable nuclear context. Specifically the Soviets concluded that conventional operations were possible or operations conducted in a "nuclear scared" configuration which, in essence, would permit a force to reap the benefits of greater concentration of forces while minimizing the risks associated with what had earlier been assumed would be operations in the context of an inevitable nuclear exchange. This reassessment produced a new range of indices geared to those new judgements concerning the nature of contemporary combat. While the Soviets maintained the older indices for operations in a nuclear context, they reintroduced indices for conventional warfare (50 percent of the former) and suggested the existence of a third set of indices midway between the former and latter--indices for combat in a nuclear scared configuration. (See Appendix 6.)

In a contemporary context Soviet tank armies, singly or in pairs, will conduct operational maneuver for the front in narrower sectors than was the case in the 1960's. Tank army sector width will range from 16 to 24 kilometers (nuclear scared) to 10 to 16 kilometers (conventional), and the army will be committed to combat along four to six routes of advance. The width of the tank army sector will vary depending on the position of the tank army in the front's operational formation, the echelonment of the tank army, and the nature of enemy defenses (prepared, partially prepared, or unprepared). Commitment of the tank army or armies to combat will occur from the first to third day of the operation at an operational depth of up to 80 kilometers into the enemy defenses.* In general

*Currently the Soviets assess the tactical depth of the defense to extend to between 40 to 50 kilometers.

terms, the weaker the defense the earlier (in time) and shallower (in depth) the tank army will be committed.

The tank division (or corps) functioning as the operational maneuver group of the combined arms army will advance to combat along two to three routes of advance through a penetration sector of from 8 to 12 kilometers (nuclear scared) to 5 to 8 kilometers (conventional). Commitment of the tank division will occur on the first or second day of operations at a depth of up to 60 kilometers into the enemy defenses.

Thus the offensive penetration sectors of both the tank army and the tank division have shrunk somewhat in comparison to the norms of the 1960's. This reflects a growing Soviet concern for achieving greater concentration than that envisioned in the 1960's as well as their belief that the rapid multiple penetration of enemy defenses will preempt effective enemy employment of nuclear weapons and perhaps any enemy recourse to those weapons. In addition the effective use of forward detachments at every level of the combined arms army and in the tank army and tank division will facilitate more rapid commitment of operational maneuver forces in more concentrated fashion.

Depth of Mobile (Operational Maneuver) Group Operations

Just as all of the indices of operational maneuver have evolved, so has the depth of mobile force operations. Specifically, the Soviets have studied the depth to which their maneuver forces have been able to operate and survive. This last index, concerning depth of operations, is one of the most important for the successful planning of operations. Its accurate prediction is a prerequisite for the achievement of the overall operational mission. Obviously the depth of operations is first and foremost dependent upon force strength. Beyond that it also reflects the configuration, sustainability, and skill of the force

conducting operational maneuver. Of all the indices, to the operational planner it is simultaneously the most important and the most difficult to predict. Hence the Soviets have relied heavily on the experience factor in projecting current and future depths of missions.

In general, as forces have become more mobile, more powerful, and better controlled, depths of operations (and associated rates of advance) have increased. That increase process, however, has been fraught with danger.

Early operations by the first Soviet tank corps and by the ad hoc tank armies up to the summer of 1943 produced notable advances but left the mobile forces exhausted and susceptible to the devastating effects of counterattacks. These counterattacks often forced the Soviets to abandon a portion or all of their offensive gains (Khar'kov, May 1942; Donbas, February 1943; Khar'kov, March 1943). Tank corps operations at Stalingrad and in southern Russia from November 1942 to March 1943 saw single tank or mechanized corps advancing to depths of from 50 to 230 kilometers. Significantly the corps which made the greatest gains (24th Tank Corps and 4th Guards Tank Corps) both virtually perished in the process. Likewise tank armies registered similar advances only to experience the same fate (Mobile Group Popov, 3d Tank Army). Only in the summer of 1943 did Soviet mobile forces begin the process of achieving ever larger advances with less fatal consequences (although often with heavy losses). Tank armies in the summer and fall of 1943 averaged advances of from 30 to 130 kilometers within a period of from 6 to 13 days with only minimal losses of territory to counterattacks. During the spring and summer of 1944 advances extended from 200 to 400 kilometers within a period of 10 to 16 days. In 1945 advances swelled to from 140 to 700 kilometers over a period of from 6 to 17 days.* The Soviets experienced their greatest depth of advance in Manchuria

*The Soviets realize that the depth of those operations in part was dictated by increasing enemy weakness.

during August 1945 when 6th Guards Tank Army advanced (virtually unopposed) up to 820 kilometers in 10 days of operations.

Meanwhile the depth of operations of tank and mechanized corps also increased from up to 120 kilometers (6 days) in 1943, to between 110 to 230 kilometers (3 to 10 days) in 1944, to 110 to 250 kilometers (2 to 12 days) in 1945. The leveling out of the depth of advance for corps level units in 1944 and 1945 indicated perhaps the natural limits of advance dictated by the size of the unit involved in those operations.

As was the case with other indices in the postwar period the Soviets envisioned depths of missions for their units in accordance with the experiences of like units in the later war years. Even so, these postwar units were also markedly heavier in combat strength than their predecessors. That increased strength explained in part the increase in projected depths of operations which has evolved in postwar years (see Appendix 6).

The Soviets expected their postwar mechanized army and its component divisions to be able to advance up to a depth of 200 kilometers into the enemy defenses during a period of 5 to 7 days (immediate mission) and thereafter to continue the attack to fulfill the subsequent mission. The mechanized division of the combined arms army first echelon rifle corps was expected to advance 25 to 30 kilometers on the first day of its commitment to combat in order to complete the penetration of the tactical defenses and begin the operational exploitation. The mechanized (or tank) division of the combined arms army mobile group was to advance 150 to 200 kilometers in from 5 to 7 days in order to secure the army's subsequent objective and prepare for the further exploitation by the front's mechanized army.

After 1954, with the conversion of the mechanized army to the more mobile, more flexible, and heavier tank army, the depth of operations of the front

mobile group expanded. The Soviets expected the tank army to advance 250 to 270 kilometers in 3 to 7 days and thereafter to continue its advance to a depth of 500 kilometers within an overall period of 13 days. Likewise the tank division of the combined arms army would advance 70 to 100 kilometers in 1 to 2 days in order to pave the way for commitment of the front's tank army.

After 1960 the depth of operational missions expanded further in the wider and more dispersed realm of the nuclear battlefield. By then tank armies were to advance up to 300 kilometers in 3 to 7 days and tank divisions of combined arms armies were to advance up to 100 kilometers per day of combat.

Since the late 1960's the depth of operations by operational maneuver forces has remained high but varies significantly according to the nature of the enemy defense. Thus the tank army is tasked to advance 250 to 350 kilometers in 3 to 5 days while the tank division of the combined arms army is to advance 100 to 150 kilometers within 2 to 4 days after commitment to combat. While rates of advance vary considerably through various stages of the operation (for example, penetration, exploitation, and pursuit), there has been a gradual increase in those rates since the war as the mobility and firepower of operational forces have increased.

Summary

The indices covered here are the most important ones associated with the operations of mobile (operational maneuver) forces. They are not, however, the only ones. In fact the Soviets have looked in detail at other aspects of mobile force operations including sustainability; tank and personnel attrition; air, artillery, antitank, and antiaircraft support; engineer requirements; command, control, and communication; and precombat (combat march columns) formation. The Soviets have also focused considerable attention on the operations of forward

detachments (just touched upon in this paper) which, through their conduct of tactical maneuver, to a large extent condition the success or failure of operational maneuver forces. Soviet concern for all of these facets of operational maneuver underscores the importance the Soviets attach to operational maneuver in contemporary warfare.

The evolution of Soviet postwar operational maneuver force employment indices demonstrates that the Soviets have displayed remarkable consistency regarding the timing, sector, and depth of mobile force operations. Given the rational evolution of these indices, it is no wonder that the Soviets have been studying so intensely the operations of mobile forces in the last 3 years of war. They firmly believe in the current relevance of those experiences with operational maneuver.

Conclusions

The new Soviet mobile concepts clearly have developed out of the study of World War II and postwar experiences. They are concepts that pay considerable attention to the factors of time and space. They are concepts that involve careful tailoring of forces and the development of mass and concentration through the time-phased use of forces rather than by the classic linear massing of forces in dense and highly vulnerable formations. Moreover, they are concepts that are derived from intense Soviet study of their prior experiences in the operational maneuver, in particular those of World War II. All the while the Soviets have been careful to balance this extensive research against the new requirements produced by changing technology, improved weaponry, improved command and control, the revolution in electronics, and changes in a multitude of other areas.

The Soviets realize that technological changes in weaponry, and particularly in the field of electronics and computer science, pose new challenges to the military planner and operator.* Although these challenges often take the form of problems they also offer opportunities to an army that objectively analyzes the nature of technological change and capitalizes on the essence of that change. Through the study of the past the Soviets have defined the basic requirements for conducting successful operational maneuver with mobile forces. They have distilled from this study those constraints which govern the degree of success a mobile force can achieve. These constraints take the form of basic battlefield tactical and operational techniques. They are further defined by the system of norms developed from that detailed study which provides basic

*See the numerous articles by V. Bondarenko in Kommunist Vooryzhennikh sil' (Communists of the Armed Forces).

indices for the conduct of all facets of operational maneuver. In the absence of other data, these norms are a suitable starting point for planners.

However, in a period when all forces tend to be mobile it is, in the Soviet's view, necessary to capitalize on technology in order to provide operational maneuver forces with an advantage over other mobile forces. This advantage is best achieved by crisper, more timely procedure and by the exploitation of the factor of time in all phases of planning and conducting operations. Here the computer and mathematical calculations can provide increased efficiency that may make the difference between battlefield success and failure. Hence the Soviets have subjected their planning procedures and virtually every aspect of the conduct of operations to the scrutiny of systems analysts and mathematicians. This approach produces a myriad of nomograms and equations which when applied to the traditional system of norms produces more accurate indices for the planning and conduct of military operations.* These efforts promise to increase the efficiency of planning and conducting operations and result in saved time. This exploitation of the factor of time combined with a sound understanding of the nature of operational maneuver will, in the Soviet view, result in a marked advantage over their opponent on the future battlefield.

This intensive study of the past combined with a recognition of the technological realities of the present can produce a sharper, more effective Soviet military force in the future. The resulting changes, which have already become apparent in the 1980s and which will become even more apparent in the future, indicate very clearly that for the Soviets the successful conduct of imaginative operational maneuver has been and will remain the key to offensive success on the modern battlefield.

*For example, see A. Ya. Bayner, Takticheskii raschet (Tactical calculations) Moscow: Voenizat, 1982.

- Appendix 1. Tank Army Operational Formation
- Appendix 2. Tank Corps Operational Formation
- Appendix 3. Mechanized Corps Operational Formation
- Appendix 4. Tank Army Operations
- Appendix 5. Tank/Mechanized Corps Operations
- Appendix 6. Postwar Operational Maneuver Indices
- Appendix 7. Summary of Operational Maneuver Indices

Abbreviations

A	Rifle Army (combined arms army)	CC	Cavalry Corps
GA	Guards Army	GCC	Guards Cavalry Corps
TA	Tank Army	GHTR	Guards Heavy Tank Regiment
GTA	Guards Tank Army	MRR	Motorized Rifle Regiment
		GSPB	Guards Self-Propelled Artillery Brigade
TC	Tank Corps	GSPR	Guards Self-Propelled Artillery Regiment
GTC	Guards Tank Corps	TBN	Tank Battalion
MC	Mechanized Corps	MRBN	Motorized Rifle Battalion
GMC	Guards Mechanized Corps	MRCO	Motorized Rifle Company
RC	Rifle Corps		
GRC	Guards Rifle Corps		
RD	Rifle Division		
GRD	Guards Rifle Division		
TB	Tank Brigade		
GTB	Guards Tank Brigade		
MB	Mechanized Brigade		
GMB	Guards Mechanized Brigade		
MRB	Motorized Rifle Brigade		
GMRB	Guards Motorized Rifle Brigade		
TR	Tank Regiment		
GTR	Guards Tank Regiment		
RR	Rifle Regiment		
GRR	Guards Rifle Regiment		
TDB	Tank Destroyer Brigade		
GTDB	Guards Tank Destroyer Brigade		

APPENDIX 1.

TANK ARMY OPERATIONAL FORMATION

OPERATION	TANK ARMY	STRENGTH (TANKS, SP GUNS)	1st ECHELON	2d ECHELON	RESERVE	FORWARD DETACHMENT
Voronezh (July 42)	5TA	600	7TC 11TC 340RD 19TB	2TC	--	---
Stalingrad (July 42)	1TA	250	13TC 28TC 131RD 158RD	--	--	--
Stalingrad (Nov 42)	5TA	400	47GRD 119RD 124RD 14GRD 1166RR/ 346RD	159RD 1TC 26TC 8CC 3 Motorcycle Rgt	346RD	
Donbas (Feb 43)	Mobile Group Popov	212	3TC/57RD 13TC/41GRD 10TC/52RD	4GTC/38GRD	--	--
Khar'kov (Feb 43)	3TA	165	48GRD 160RD 62GRD 111RD	15TC 12TC 6GCC	184RD	--
Korsun- Shevchenkovsky (Jan 44)	5GTA	236	20TC 29TC	13TC	--	25TB*
	6TA	210	5GTC 5MC	--	233TB	233TB(+)
Proskurov- Chernovitsy (Mar 44)	1GTA	239	8GMC 11GTC	--	64GTB	
	3GTA	310	9MC 6GTC 7GTC	--	52GTB	
	4TA	253	6GMC 10GTC	--	--	166TB 49MB
Uman- Botoshani (Mar 44)	2TA	231	3TC 16TC	--	11GTB	
	5GTA	221	29TC 20TC	18TC	--	25TB 36TB
	6GTA	153	5GTC 5MC	--	--	

*After penetration completed

APPENDIX 1. (Cont.)

OPERATION	TANK ARMY	STRENGTH (TANKS, SP GUNS)	1st ECHELON	2d ECHELON	RESERVE	FORWARD DETACHMENT
Belgorod- Khar'kov (Aug 43)	1TA	571	6TC 3MC	31TC	28TDB	200TB(+) 49TB(+)
	5GTA	543	29TC 18TC	5GMC	--	32TB(+) 110TB(+)
Krivoi-Rog (Oct 43)	5GTA	300	28TC 29TC 7GMC	--	5GMC (front reserve)	--
Alexsandro- Znamenka (Nov 43)	5GTA	358	18TC 29TC	5GMC	7GMC	--
Kiev (Nov 43)	3GTA	621	6GTC 9MC	7GTC	91TB	91TB*
Zhitomir- Berdichev (Dec 43)	1GTA	546	11GTC 8GMC	--	64GTB	GTB* 1GTB*
	3GTA	419	9MC 6GTC	7GTC	91TB	
Kirovograd (Jan 44)	5GTA	366	18TC 29TC	8MC	--	
Belorussia (Jun 44)	5GTA	534	29TC 3GMC	--	1G Motor- cycle Rgt	31TB(+) 9GMB(+)
	2TA	732	3TC 8GTC	16TC	--	107TB
Lvov- Sandomirsk (Jul 44)	1GTA	416	8GMC 11GTC	--	64GTB 19SPE	1GTB(+) 44GTB
	3GTA	555	9MC 7GTC	6GTC	91TB	69MB(+) 56TB(+)
	4TA	464	10GTC	6GMC	--	17GMB 61GTB
Yassy- Kishinev (Aug 44)	6TA	551	5GTC 5MC	--	47TR	20GTB(+)
Diemel (Oct 44)	5GTA	440	29TC 3GMC	--	47MB	31TB 19GTB
Debrecan (Oct 44)	6GTA	183	5GTC 9GMC	--	TR TR	

*After penetration completed

APPENDIX 1. (Cont.)

OPERATION	TANK ARMY	STRENGTH (TANKS, SP GUNS)	1st ECHELON	2d ECHELON	RESERVE	FORWARD DETACHMENT
Vistula- Oder (Jan 45)	1GTA	752	11GTC 8GMC	--	64GTB 19SPB	1GTB 44GTB
	2GTA	873	9GTC 12GTC	1MC	--	47GTB 66GTB
	3GTA	922	6GTC 9MC	7GTC	57GHTR	51GTB 70MB
	4TA	680	6GMC 10GTC	--	93TB 22SPB	16GMB 63GTB
East Prussia (Jan 45)	5GTA	585	10TC 29TC	--	47MB	--
East Pomerania (Feb 45)	1GTA	584	8GMC 11GTC	--	64GTB	44GTB 1GTB
	2GTA	276	12GTC 9GTC 1MC	--	--	--
Budapest (Nov 44)	6GTA	325	5GTC 9GMC	--	--	39TR
Vienna	6GTA	406	5GTC 9GMC	--	--	--
Berlin (Apr 45)	1GTA	709	11TC 11GTC 8GMC	--	64GTB 19SPB	TBN(+) 1GTB 44GTB
	2GTA	672	9GTC 12GTC	1MC	--	--
	3GTA	632	6GTC 7GTC	9MC	57GHTR	52GTB 56GTB
	4GTA	395	10GTC 6GMC	5GMC	--	52GTB 16GMB
	3GTA	475	6GTC 7GTC	9MC	57GHTR	
Prague (May 45)	4GTA	325	10GTC 6GMC	56MC	63GTB 7GSPB	63GTB 35GMB
	6GTA	138	5GTC 9GMC	2GMC	4G Motor- cycle Rgt	22GTB 30GMB
	6GTA	1019	7MC 9GMC	5GTC	--	MRR(+) MRR(+)

APPENDIX 2.

TANK CORPS OPERATIONAL FORMATION

<u>OPERATION</u>	<u>TANK CORPS</u>	<u>STRENGTH (TANKS, SP GUNS)</u>	<u>1st ECHELON</u>	<u>2d ECHELON</u>	<u>RESERVE</u>	<u>FORWARD DETACHMENT</u>
Khar'kov (May 42)	21TC/6A	130	--	--	--	--
Voronezh (Jul 42)	7TC/5TA	200	59TB, 1/12MRB 53TB	160TB 12MRB	--	--
Volchansk (Jun 42)	13TC/21A	180	167TB 158TB	85TB 20MRB	--	--
Stalingrad (Nov 42)	1TC/5TA	168	89TB 117TB	159TB 44MRB	--	--
	26TC/5TA	168	157TB 19TB	TB 14MRB	--	2MR CO(+)
	4TC/21A	159	69TB 102TB	45TB 4MRB	--	--
Middle Don (Dec 42)	17TC/6A	168	174TB 67TB	31MRB	66TB	TBN(+) TBN(+)
	24TC/1GA	159	4GTB 130TB	54TB 24MRB	--	--
Donbas (Feb 43)	4GTC/Mobile Gp Popov	40	--	3GMRB	12GTB 13GTB	14GTB*
Sevsk (Feb 43)	11TC/2TA	190	160TB 12MRB 59TB	53TB	--	--
Khar'kov (Feb 43)	12TC/3TA	85	97TB 166TB	30TB 13MRB	--	TBN(+) TBN(+)
Orel (Jul 43)	11TC/4TA	200	65TB 20TB	36TB 12MRB	--	--
Belgorod- Khar'kov (Aug 43)	6TC/1TA	200	6MRB 22TB	112TB	--	200TB(+)
	29TC/5GTA	130	TB TB	MRB	--	32TB
	4GTC/27A	200	12GTB 3GMRB	--	13GTB	14GTB
Kalmus River (Sep 43)	11TC/2GA		65TB 3GTB	20TB	12MRB	--

*with all corps tanks

APPENDIX 2 (Cont.)

OPERATION	TANK CORPS	STRENGTH (TANKS, SP GUNS)	1st ECHELON	2d ECHELON	RESERVE	FORWARD DETACHMENT
Zhitomir- Berdichev (Dec 43)	4GTC/60A	150	13GTB 14GTB	3GMRB	12GTB	12GTB*
Proskurov- Chernovitsy (Mar 44)	4GTC/60A	78	13GTB 12GTB	3GMRB	--	14GTB
	6GTC/3GTA	100	51GTB 53GTB	22GMRB	52GTB (Army reserve)	
Belorussia (Jun-Jul 44)	2GTC/11GA	252	4GTB 26GTB	4GMRB 25GTB	--	--
	11TC/8GA	233	36TB/50GHTR 65TB/1493SPR	12MRB	20TB	TBN(+) TBN(+)
Lvov- Sandomirsk (Jul 44)	4GTC/1GA	230	14GTB 12GTB	3GMRB	13GTB	TBN(+) TBN(+)
Yassy- Kishinev (Aug 44)	5GTC/6TA	250	20GTB 22GTB	6GMRB	21GTB	20GTB(+)
Vistula- Oder (Jan 45)	11TC/69A	272	20TB/1493SPR 65TB/50GHTR, 12MRB/1461SPR	36TB	--	TBN(+) TBN(+)
	4GTC/5GA	242	12GTB 14GTB	3GMRB/29HTR	13GTB	TBN(+) TBN(+)
East Prussia (Jan 45)	8GTC/2SA		__GTB __GTB	__GTB __GMRB		
	10TC/5GTA	270	136TB 178TB	__TB __MRB	--	TBN(+) TBN(+)
Upper Silesia (Feb 45)	4GTC/21A		12GTB 13GTB	3GMRB	14GTB	
Berlin (Apr 45)	7GTC/3GTA		54GTB 53GTB	23GMRB 357GTB	--	--
	4GTC/5GA	65	3GMRB** 13GTB**	12GTB	14GTB	--
	11TC		65TB/50GHTR 36TB	12MRB/1461SPR	20TB	--
Manchuria (Aug 45)	5GTC/6GTA	300+	20GTB 21GTB	22GTB 6MRB	40 Motor- cycle Rgt	TBN(+) TBN(+)

*After penetration completed

**Used for infantry support

APPENDIX 3.

MECHANIZED CORPS OPERATIONAL FORMATION

<u>OPERATION</u>	<u>CORPS</u>	<u>STRENGTH (TANKS/SP GUNS)</u>	<u>1st ECHELON</u>	<u>2d ECHELON</u>	<u>RESERVE</u>	<u>FORWARD DETACHMENT</u>
Bely (Nov 42)	1MC/41A	210	65TB 35MB 219TB	37MB 19MB		
Stalingrad (Nov 42)	4MC/51A	220	36MB/26TR 60MB/21TR 59MB/20TR	--	--	55TR* 158TR*
	13MC/57A	180	61MB/TR 62MB/TR	17MB/TR		166TR* 35TR*
Kotel'- nikovsky (Dec 42)	6MC/2GA	195	55MB/30TR 54MB/79TR 51MB/76TR	--	77TR 73TR	--
Verkh- Kumskii (Dec 42)	4MC/2GA	107	59MB/20TR 60MB/21TR 36MB/158TR	--	55TR	
Middle Don (Dec 42)	16MC/3GA	200	16MB/13TR 17TR 26MB/19TR	--	36MB	--
Rostov (Jan 43)	6MC/2GA	150	51MB/76TR 54MB/79TR 55MB/80TR	--	77TR 78TR	
Kursk (Jul 43)	56MC/5GTA	250	24GTB 12GMB	10GMB 11GMB	--	55TR
Mius (Jul 43)	4GMC/2GA	170	14GMB 15GMB 16GMB			
Mius (Aug 43)	4GMC (Front Mobile Group)	210	15GMB 14GMB	36GTB 13GTB	--	--
Belgorod- Khar'kov (Aug 43)	3MC/1TA	180-190	1MB 1GTB	10MB	--	49TB/-
	3GMC/47A	213	7GMB 9GMB	35GTB 8GMB	--	--
	1MC/53A	212	37MB 19MB 219TB	35MB	-- -- --	TR TR TR
Nikopol	4GMC/8GA	210	14GMB 36GTB 15GMB	13GMB		

*Used as infantry support tanks.

APPENDIX 3 (Cont.)

OPERATION	CORPS	STRENGTH (TANKS, SP GUNS)	FORWARD			
			1st ECHELON	2d ECHELON	RESERVE	DETACHMENT
Bereznogovatoye- Snigirevka (Mar 44)	4GMC/Cav. Mech Group Pliyev	200	15GMB 36GTB	-- 13GMB 14GMB	--	--
Belorussia (Jun 44)	3GMC/ Cav.Mech Group	196	9GMB/1833 SPR 8GMB	7GMB 35GTB	--	
	1MC/Cav. Mech Group	210	37MB 19MB	35MB 219TB	--	MRBN(+) MRBN(+)
Yassy- Kishinev (Aug 44)	4GMC/Front Mobile Group	232	13GMB/1961 TDR 14GMB/1512 TDR 15GMB/1962 TDR	36GTB 5MRB	--	--
	7MC/37A	208	16MB 63MB 64MB	41 TB	--	--
	5MC/6TA	210	2MB 9MB	45MB	233TB	
Vistula- Oder (Jan 45)	1MC/2GTA	260	37MB 19MB	35MB 219TB	--	--
East Pomerania (Feb 45)	1MC/2GTA	130	__MB __MB 219TB	__MB		
Budapest (Oct 44- Jan 45)	4GMC/46A	124	14GMB/1512 SPR 15GMB	36GTB/352 HSPR, 13GMB		
Morava- Ostrava (Mar 45)	5GMC/Front Mobile Group		10GMB 11GMB	24GTB 12GMB	--	--
Upper Silesia (Mar 45)	5GMC/60A		12GMB* 24GTB* 10GMB	11GMB	--	--
Berlin (Apr 45)	1MC/2GTA	220	37MB 35MB	19MB 219MB		2 Assa. groups per brigade
Manchuria (Aug 45)	9GMC (6GTA)	300+	30GMB 57MRD	31GMB 46GTB	136GMB	2MRBNs 2MRBNs
	10MC	300+	204TB/1253 SPR	42MB/1207 SPR		72GMB/1412 72TB/2 Mot cycle

*Used for infantry support

APPENDIX 4. TANK ARMY OPERATIONS

OPERATION	TANK ARMY	STRENGTH (TANKS/SP GUNS)	# OF ECHELONS	COMMITMENT TO COMBAT				DEPTH OF OPERATION (Kms)	DURATION/ DAYS
				WIDTH OF SECTORS	# OF ROUTES	DEPTH(Kms)	DAY OF OPERATION		
Voronezh (Jul 42)	5TA	600	2	12-15	4	1	1	20-30	4
Stalingrad (Nov 42)	5TA	400	2	10	6	1.5-3	1	120	3
Donbas (Feb 43)	Mobile Group Popov	212	2	30-35	6	1-3	1	130	14
Khar'kov (Feb 43)	3TA	165	2	20	4	20	2	170	25
Belgorod-Khar'kov (Aug 43)	1TA	571	2	4	2	3-5	1	150	6
	5GTA	543	2	5	2	3-5	1	120	6
Krivoi-Rog (Oct 43)	5GTA	300	1	10-12	3	2-3	1	80-100	8
Kiev (Nov 43)	3GTA	621	2	8-10	4	8-10	2	90-100	5
Zhitomir-Berdichev (Dec 43)	1GTA	546	1	8	4	3-5	1	180	13
	3GTA	419	2	8	4	4	1	180	13
Kirovograd (Jan 44)	5GTA	366	2	10-12	4	1-2	1	50	4-5
Korsun-Shevchenkovsy (Jan 44)	5GTA	236	2	10	2	5-7	1	75	6
	6TA	210	1	10	4	1	1	80	4

APPENDIX 4. (Cont.)

OPERATION	TANK ARMY	STRENGTH (TANKS/SP GUNS)	# OF ECHELONS	COMMITMENT TO COMBAT				DEPTH OF OPERATION (Kms)	DURATION/ DAYS
				WIDTH OF SECTORS	# OF ROUTE'S	DEPTH(Kms)	DAY OF OPERATION		
Proskurov- Chernovtsy (Mar 44)	1GTA	239	1	14	4	70	17	180	8
	3GTA	310	1	16	6	12	1	200	10
								100	3
								300	23
Uman- Botoshani (Mar 44)	4TA	253	1	10	4	12	1	100	3
								300	26
	2TA	231	1	12	4	2-3	1	140	4
								250	13
Belorussia (Jun 44)	5GTA	221	2	10	4	2-4	1	140	4
								300	15
	6TA	153	1	11	4	15-18	2	140	4
								300	14
Lvov- Sandomirsk (Jul 44)	5GTA	534	1	7-8	4	25-30	4	160	4
								460	13
	2TA	732	2	18-20	4	75	5	300	10
	1GTA	416	1	9-10	4	20	5	400	15
Yassy- Kishinev (Aug 44)	3GTA	555	2	6	1	6-3	3	300	12
								330	15
	4TA	464	2	6	1	15-20	4-6	350	13
	6TA	551	1	12-13	4	12-14	1	320	8
Meme1 (Oct 44)	5GTA	440	1	8	4	18-29	2	110	5

APPENDIX 4. (Cont.)

OPERATION	TANK ARMY	STRENGTH (TANKS/SP GUNS)	# OF ECHELONS	COMMITMENT TO COMBAT				DURATION/ DAYS
				WIDTH OF SECTORS	# OF ROUTES	DEPTH(Kms)	DAY OF OPERATION	
Debrecan (Oct 44)	6GTA	188	1	10	4	1	1	
Vistula- Oder (Jan 45)	1GTA	752	1	8-10	4	14-16	2	17
	2GTA	873	2	19	4	15-20	3	17
	3GTA	922	2	10	4	6-7	1	17
	4TA	680	1	10-12	4	4-5	1	13
East Prussia (Jan 45)	5GTA	585	1	13-14	4	20-25	4	6 12
East Pomerania (Feb 45)	1GTA	584	1	8	4	7-8	1	6
	2GTA	276	1	10	4	5	1	6
Budapest (Nov 44)	6GTA	325	1	12-13	4	2	1	
Vienna	6GTA	406	1	8	4	15	4	
Berlin (Apr 45)	1GTA	709	1	8	6	5-6	1	18
	2GTA	672	2	7	4	6-8	1	18
	3GTA	632	2	7	4	3-5	1	17
	4GTA	395	2	7	4	3-4	1	17
Prague (May 45)	3GTA	475	2	10-11	4	--	1	
	4GTA	325	2	12-13	4	--	1	
	6GTA	188	2	3	4	12-18	1	
Manchuria (Aug 45)	6GTA	1019	2	100	6-8	--	1	10

APPENDIX 5. TANK/MECHANIZED CORPS OPERATIONS

OPERATION	CORPS	STRENGTH (TANKS/SP. GUNS)	# OF ECHELONS	COMMITMENT TO COMBAT				DEPTH OF OPERATION (Kms)	DURATION/ DAYS
				WIDTH OF SECTORS	# OF ROUTES	DEPTH(Kms)	DAY OF OPERATION		
Khar'kov (May 42)	21TC	130	2			35-50	6	12-15	2
Bely (Nov 42)	1MC	200	2	8-10	6	?	2	25-30	4
Stalingrad (Nov 42)	1TC	168	2	4-5	2	2-3	1	140	5
	26TC	168	2	5	4	1.5-2	1	120	3
	4TC	159	2	6-8	2	3-4	1	120	3
	13MC	180	2	5	2	4-6	1	50	4
	4MC	220	1	7	3	6-7	1	85	2.5
Kotel'nikovsy (Dec 42)	6MC	195	1		3	1-3	1		
Verkh-Kumskii (Dec 42)	4MC	107	1		3	-	1		
Middle Don (Dec 42)	17TC	163	2	3	2	1-2	1	180	8
	18TC	160	2	7	2	2-4	1	215	11
	25TC	160	2	7	2	2-4	1	200	8
	24TC	159	2	4	3	24-28	3	230	7
	16MC	200	1		3		1	100	15
Rostov (Jan 43)	6MC	150	1	7-8	3	-	1		

APPENDIX 5. (Cont.)

OPERATION	CORPS	STRENGTH (TANKS/SP GUNS)	# OF ECHELONS	COMMITMENT TO COMBAT				DURATION/ DAYS
				WIDTH OF SECTORS	# OF ROUTES	DEPTH(Kms)	DAY OF OPERATION	
Donbas (Feb 43)	4GIC	40	2	2	1	2-3	1	
Khar'kov (Feb 43)	12IC	85	2	10	2	20	2	25
Orel (Jul 43)	11IC	200	2		2		1	10
Mius River (Aug 43)	4GMC	210	2		2	1-2	1	
Belgorod- Khar'kov (Aug 43)	6IC	200	2	2	1	3-5	1	6
	4GIC	200	1	4	2	3-5	1	9
	1MC	212	2	10-14*	6	2-3	1	20
	3GMC	213	2	8-9	2	2-3	1	7
Kalmus River (Sep 43)	11IC		2	2-3	2		1	15
Kiev (Nov 43)	5GIC	200	2	4*	2	2-3	1	7
Zhitomir- Berdichev (Dec 43)	4GIC	150	2		4	20-25	1	
Nikopol (Jan 44)	4GMC	210	2		3	8	2	
Proskurov- Chernovtsy (Mar 44)	4GIC	78	2		2	12	1	
	6GIC	100	2	5-6	2	12	1	

*Committed for infantry support

APPENDIX 5. (Cont.)

OPERATION	CORPS	STRENGTH (TANKS/SP GUNS)	# OF ECHELONS	COMMITMENT TO COMBAT				DEPTH OF OPERATION (Kms)	DURATION/ DAYS
				WIDTH OF SECTORS	# OF ROUTES	DEPTH(Kms)	DAY OF OPERATION		
Belorussia (Jun 44)	1GTC	250	2	7	2	5-6	1	70 180	3 10
	9TC	250	2	6	1	2-4	2	40	1-5
	2GTC	252	2	7-8	?	24	4	130 220	4 8
	11TC	233	2	7	2	10	2		
	3GMC	196	2	6-8	?	20-25	2	130 230	5 10
Lvov- Sandomirsk (Jul 44)	1MC	210	2	8	?	2-3	2	60 170	3 8
	4GTC	230	2	6	2	5	4		
	5GTC	250	2	6	?	12-14	1	300	10
	7MC	208	2	6	3	20-25	2	110	3
	4GMC	232	2	6	3	20-25	2	120	3
Vistula- Oder (Jan 45)	11TC	272	?	6-7	?	6-8	1	120 180	4 6
	4GTC	242	?	4	?	2-3	1	130	6
	31TC	240	?	4-6	?	3-4	1	125	8
	9TC	240	?	3-4	?	4	1		

APPENDIX 5. (Cont..)

OPERATION	CORPS	STRENGTH (TANKS/SP GUNS)	# OF ECHELONS	COMMITMENT TO COMBAT				DURATION/ DAYS
				WIDTH OF SECTORS	# OF ROUTES	DEPTH(Kms)	DAY OF OPERATION	
East Prussia (Jan 45)	8GTC	250	2	4-5	2	2-3	2	
	10TC	270	2	6-7	?	20-25	4	6 12
East Pomerania (Feb 45)	3GTC	220	2	4-5	2	10-12	2	
	1MC	180	2	4-5	2	5	1	
Budapest (Nov 44- Jan 45)	2GMC	200	2	12	2	6-8	1	
	4GMC	124	2	12	2	6-8	1	2
Morava- Ostrava (Mar 45)	5GMC		2	6-7	2	5-6	3	
Upper Silesia (Mar 45)	5GMC		2	10	3	1	1	
Berlin (Apr 45)	7GTC	200	2	3	2	3-5	1	17
	11TC	220	2	2-3	2	5-6	1	17
	9GTC	210	2	3-4	2	6-8	1	17
Manchuria (Aug 45)	9GMC	300+	2	30	3-4	-	1	10

APPENDIX 6.

POSTWAR OPERATIONAL MANEUVER INDICES

1st POSTWAR PERIOD (1945-1954)

OPERATIONAL MANEUVER FORCE/LEVEL	STRENGTH (TANKS/SP GUNS)	NORMAL ECHELONMENT	COMMITMENT TO COMBAT				DEPTH OF MISSION(Kms)	DURATION/ DAYS
			WIDTH OF SECTORS	# OF ROUTES	DEPTH(Kms)	DAY OF OPERATION		
1946 Mechanized Army/ Front	1000	2	8-12	4	20-25	2	200	5-7
1954 Mechanized Army/ Front	1200	2	8-12	4	20-25	2	200	5-7
1946 Tank Division/ MA	336	2	4-6	2	20-25	2	200	5-7
1954 Tank Division/ MA	484	2	4-6	2	20-25	2	200	5-7
1946 Mechanized Division/RC, CAA, MA	260	2	4-8	2	8-10 10-15 20-25	1 1-2 2	25-30/RC 150-200/CAA 200/MA	1 5-7 5-7
1954 Mechanized Division/RC, CAA, MA	349	2	4-8	2	8-10 10-15 20-25	1 1-2 2	25-30/RC 150-200/CAA 200/MA	1 5-7 5-7

APPENDIX 6. (Cont.)

2d POSTWAR PERIOD (1954-1962)

OPERATIONAL MANEUVER FORCE/LEVEL	STRENGTH (TANKS/SP GUNS)	NORMAL ECHELONMENT	COMMITMENT TO COMBAT			DEPTH OF MISSION(Kms)	DURATION/ DAYS
			WIDTH OF SECTORS	# OF ROUTES	DAY OF OPERATION		
1958 Tank Army/Front	1400-1500	2	16-24	4-6	2	250-270 270-500	3-7 5-13
1962 Tank Army/Front	1100-1500	2	16-24	4-6	2	250-270 270-500	3-7 5-13
1958 Tank Division./CAA	418	2	8-12	2-3	1	70-100	1-2
1961 Tank Division/CAA	422	2	8-12	2-3	1	70-100	1-2
1958 Motorized Rifle Division/CAA*	237	2	8-15	2	1	70	1
1961 Motorized Rifle Division/CAA*	251						

*No operational maneuver function

APPENDIX 6. (Cont.)

3d POSTWAR PERIOD (1963-1968)

OPERATIONAL MANEUVER FORCE/LEVEL	STRENGTH (TANKS/SP GUNS)	NORMAL ECHELONMENT	COMMITMENT TO COMBAT				DURATION/ DAYS
			WIDTH OF SECTORS	# OF ROUTES	DEPTH(Kms)	DAY OF OPERATION	
1968 Tank Army/Front*	1000-1300	1-2	20-32	4-6	0-60	1-2	3-7
1968 Tank Division/ CAA*	333	1-2	(10-16) 2d Ech	2	10-30	1	1
			(16-20) 1st Ech	2-3	0-3	1	100
1968 Motorized Rifle Division/CAA*	197	1-2	10-25	--	0-3	1	1

*No clear operational maneuver function

APPENDIX 6. (Cont.)

4th POSTWAR PERIOD (1968-1980s)

OPERATIONAL MANEUVER FORCE/LEVEL	STRENGTH (TANKS/SP GUNS)	NORMAL ECHELONMENT	COMMITMENT TO COMBAT				DAY OF OPERATION	DEPTH OF MISSION(Kms)	DURATION/ DAYS
			WIDTH OF SECTORS	# OF ROUTES	DEPTH(Kms)				
1984 Tank Army/Front	1300-1500	1-2	16-24 (nuclear scared)	4-6	0-80	1-3		250 prepared defense	7
								300 partially prepared defense	5
								350 unprepared defense	3
1984 Tank Division/ CAA	322	1-2	8-12 (nuclear scared)	2-3	0-60	1-2		100 prepared	4
								120 partially prepared	3
								150 unprepared	2
1984 Motorized Rifle Division/CAA*	265	1-2	5-8 (conventional)					50 prepared	3-4
								60 partially	2-3
								70 unprepared	1-2
		1-2	5-10 (conventional)						

*No operational maneuver function

APPENDIX 7.

SUMMARY OF OPERATIONAL MANEUVER INDICES

PERIOD	WIDTH OF SECTOR				MOBILE GROUP	
	FRONT	MOBILE GROUP		ARMY	MOBILE GROUP	
		TANK ARMY	TANK ARMY		TANK CORPS	MECHANIZED CORPS
Pre-War	300-400 (1936) 150-300 (1940)	--	--	50-80	--	20
1941	300-400 (600)	--	--	25-100	--	--
1942	250-350	10-15	10-15	20-80	6-10	--
Winter 1942-43	250-350	10-30	10-30	30-140	4-14	5-8
Summer-Fall 1943	150-200	6-12	6-12	50-80	6-10	8-10
1944-45	200-250 (450)	8-14	8-14	10-60	3-6	6-12
MECHANIZED ARMY						
1946-53	200-300	8-12	8-12	40-50	4-6	4-8
TANK ARMY						
1954-62	250-350	16-24	16-24	50-80	8-12	(8-15)
1963-68	300-400	(20-32)	(20-32)	75-100	(10-16)2 echelon (16-20)1 echelon	(10-25)
1969- Present	250-350	16-24 (N.S.)	16-24 (N.S.)	60-100	8-12 (N.S.)	(8-16)N.S.
() NO OPERATIONAL MANEUVER FUNCTION				10-16 (CONV)	5-8 (CONV)	(5-10) CONV.

N.S. "Nuclear scared" posture
Conv. Conventional operations

Appendix 7. (Cont.) MOBILE (OPERATIONAL MANEUVER) GROUP

DEPTH AND DAY OF COMMITMENT								
PERIOD	DEPTH OF TACTICAL DEFENSE	TANK CORPS/DIVISION		MECHANIZED CORPS/DIVISION		TANK/MECHANIZED ARMY		
		DEPTH	DAY	DEPTH	DAY	DEPTH	DAY	
Pre-War	15-20	--	--	6-8	1	--	--	--
1941	8-10	--	--	--	--	--	--	--
1942	10-12	1-50	1-6	--	--	1-3	1	1
Winter 1942-43	10-12	1-3	1	1-3	1	1-3	1	1
Summer-Fall 1943	12-14	3-5	1	1-3	1	2-10	1-2	1-2
1944	12-16	2-25	1-4	8-25	2	2-25(75)	1-5	1-5
1945	13-24	2-25	1-4	2-8	1-3	3-25	1-4	1-4
1946-53	8-10	20-25	2	8-10	1-2	20-25	2	2
1954-62	10-20	16-20	1	--	--	40-45	2	2
1963-68	20-40	To 30	1	--	--	To 60	1-2	1-2
1969- Present	40-50	To 60	1-2	--	--	To 80	1-3	1-3

Appendix 7. (Cont.) MOBILE (OPERATIONAL MANEUVER) GROUP

DEPTH OF OPERATIONS

<u>PERIOD</u>	<u>FRONT MOBILE GROUP</u>		<u>ARMY MOBILE GROUP</u>	
	<u>DEPTH</u>	<u>DAYS</u>	<u>DEPTH</u>	<u>DAYS</u>
1942-43	20-170	3-25	20-230	3-25
Summer-Fall 1943	80-180	6-13	45-150	6
1944-45	140-400 (700)	6-17	110-250	2-12
1946-53	200	5-7	25-30 150-200	1 5-7
1954-62	250-270	3-7	70-100	1-2
1963-68	300	3-7	100	1
1969- Present	250-350	3-5	100-150	2-4

END

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